OPCITO TECHNOLOGIES

Migrating Microservices to Dockerized Environment

About The Customer

The customer is a leading business and data analytics service provider. These services enable businesses to understand various business operations, customer needs, and future requirements and help them build online reputation and reviews. The client's application has more than 20 underlying microservices which operate in a coordinated manner.

Business Challenge

The application used by the customer has more than 20 microservices that continuously analyze real-time and historical data. The ever-growing list of clientele meant ever-increasing data and ever-growing analytical operations, which resulted in the following challenges:

- It took a lot of work for a new developer to start any microservice because of the configurational changes needed on their local setup to start working on any of the services.
- Monitoring different services to ensure operational effectiveness was turning out to be a difficult job for the developers because different programming languages are used for different microservices.
- Interdependency between multiple microservices and programs made it difficult to test every configuration, raising questions about the overall application stability.
- Logging mechanisms from different services resulted in distributed unstructured data.

How Opcito Helped

After carefully analyzing the microservices network, functional aspects, and their interdependence, the Opcito team suggested a solution involving Docker-compose with microservices.

The Opcito team migrated the microservices to a dockerized environment and updated the microservice architecture. All 20 services are now stored in different version repositories. A docker file was created for a single repository and a single docker-compose file with services and their dependencies.

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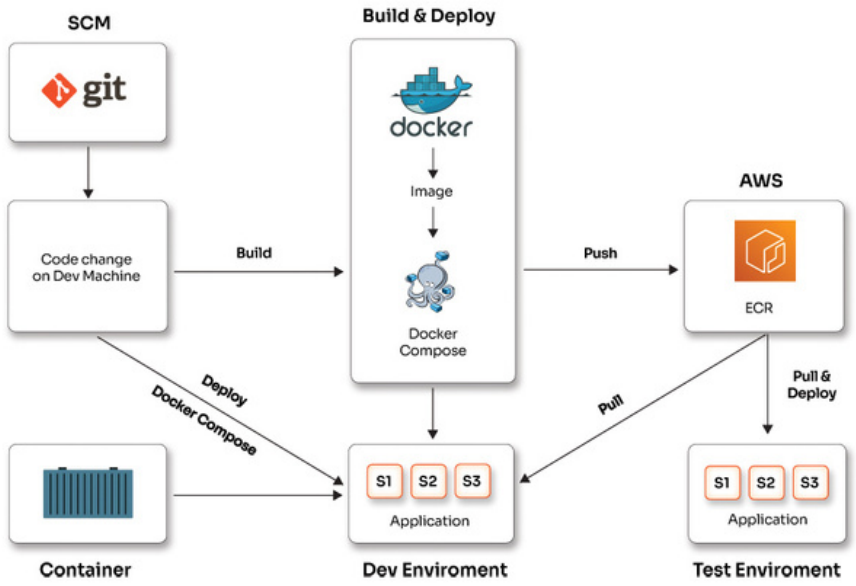
It made it easy for the developers to build any service, create the image and deploy the docker container. The developers don't need to worry about other services and their dependencies; they can build, deploy, and test them on their local machine without hassle.

The services were using two different databases – MySQL and PostgreSQL. They have their RDS instance running on AWS, and we created a script that takes the backup of the database and puts the data to S3; from that, we can download the latest dump. It helps in restoring that data and up the containers. Thus, it becomes easy for developers as they have their data on locally instead of the primary production for testing.

The Opcito team used ECS for a repository, so every time the build runs through CI, the latest image will be pushed to ECS. So, whenever a new developer comes, they can clone all the images and up the containers.



Technologies, Tools, and Platforms used

DOCKER

AWS

GIT

Benefits

SINGLE COMMAND	Build the dev environment with just a single command docker-compose up
EASY TESTING	Test at ease in the development environment
SPEED	Get started much faster than before because of the use of Docker containers instead of virtual machines
FAST DEPLOYMENT	Use Docker images instead of setting up a completely new environment for faster deployment

SCHEDULING EASE	Manage and scale containers easily
RELIABILITY	Resolve the compatibility and maintainability issues with more reliability
TRAFFIC MANAGEMENT	Control and manage the traffic flow in addition to maintaining and isolating the containers from each other for increased security
CONSISTENCY	Provide consistency across all the environments.

About Opcito

At Opcito, we believe in designing transformational solutions for our customers, start-ups, and enterprises, with our ability to unify quality, reliability, and cost-effectiveness at any scale. Our core work culture focuses on adding material value to your products by leveraging best practices in DevOps, like continuous integration, continuous delivery, and automation, coupled with disruptive technologies like containers, serverless computing, and microservice-based architectures. We also believe in high standards for quality with a zero-bug policy and zero downtime deployment approach.

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