OSoftLabs
Innovative IT Solutions

CASE STUDY

Business Needs

- Multiple small code base for easy maintenance of application
- Tightly coupled to loosely coupled application architecture
- Redesign architecture for cost optimization and scalability
- Automated deployments and reduced time-to-market

Solution

- Created microservices architecture using containers
- Service responsibility identification
- Bounded context separation
- REST API interfaces
- Implement message queues
- Implement publish/subscribe pattern
- Service deployment automation

Benefits

- Multiple small code bases for easy maintenance and adding new features
- Enabling teams to work independently of each other
- Simplification in terms of tracking code dependencies
- Reliable and scalable solution
- Complete code ownership by a single team from development to deployment
- Easier identification of performance bottlenecks
- **95%** improvement in terms of software patch deployment times

Technical

- ASP.NET, C#, JQuery, HTML5/CSS, SQL Server
- AWS Services – Lambda functions, S3, EC2, Cloud Formation, VPC, RDS, SES, SNS, SQS, CloudWatch Alarms, IAM

Building Microservices using Containers

Client

The client is a software development company trying to launch a commercial application in SaaS model. The application architecture was not scalable and had stuck with issues to enhance and debug issues in the code.

Client had several other live applications developed in the similar architectural lines which were tightly coupled and hard to maintain for multiple clients adding overhead of maintenance resources.

Challenge

Multiple teams were working on a large monolithic application which was difficult to deploy, run & scale. When new developers join the team, a significant amount of time was spent to become familiar with the code base. As the solution was cloud based, it took longer deployment push times which in turn increased the roundtrip cycle times for developers to get feedback on code changes.

Also from a business standpoint, there was a need to move from a batch-driven to an event-driven approach to improve scalability and performance.

Solution

OSoft Labs team helped the client with a thorough assessment of the requirement and came up with microservices architecture using containers.

Independent self-sufficient services of the system are defined as REST API interfaces i.e. for handling authentication requests, serving long process requests etc.

Several messaging patterns (Example: Publisher/Subscriber) were designed and implemented to support asynchronous communication between individual services.

This in-turn helped these services to be modular and scalable so that they are easy to debug. This also helped to include new features seamlessly to the existing application with zero down time. Since REST was augmented with messaging, it allowed the application to be more resilient and dynamic.

Also, existing release process and corresponding automation tools were fine tuned to deploy and test the services in a AWS EC2 Container service.

Case Study

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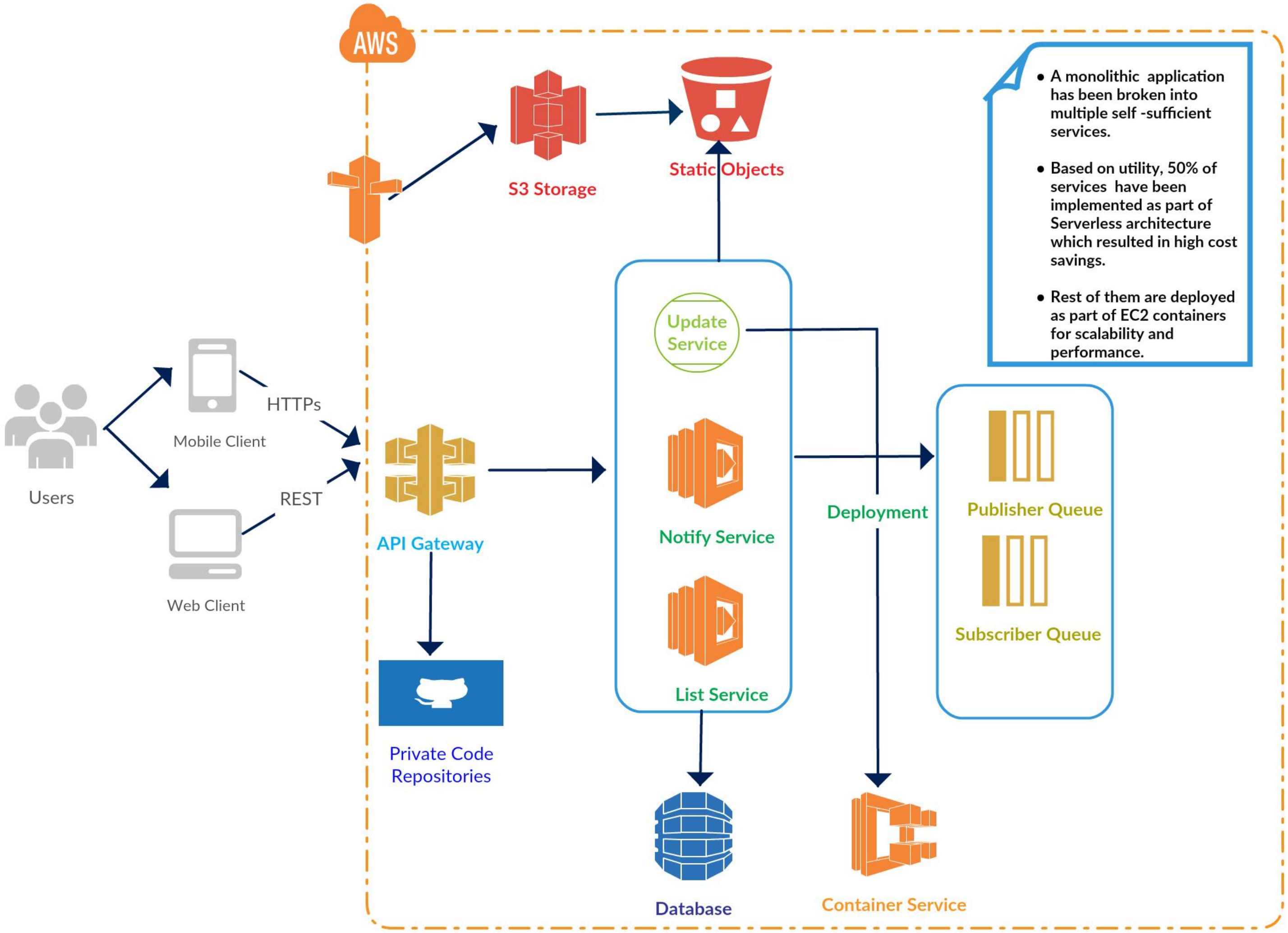

- A monolithic application has been broken into multiple self -sufficient services.
- Based on utility, 50% of services have been implemented as part of Serverless architecture which resulted in high cost savings.
- Rest of them are deployed as part of EC2 containers for scalability and performance.

About OSoft Labs

OSoft Labs provides end-to-end IT services for application development, maintenance and support to businesses, using innovative and cost effective solutions. OSoft Labs helps selecting the right technology for the business requirement which has a significant impact on the business growth to help transform and make business functions simpler, faster and better.

Founded in 2012 and head quartered in Hyderabad, India; OSoft Labs is AWS technology partner and ISO 9001:2008 company.

OSoft Labs has been recognized as "**Top 20 most promising cloud computing solutions providers – 2016**" by **CIO Review** magazine in October 2016 special edition.

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