# Enhance ParkMyCloud Platform & ARM Software for Turbonomic, an IBM company


## SUMMARY

Turbonomic, Inc., an IBM company, was looking for a Digital Engineering partner to enhance their Turbonomic and ParkMyCloud platforms. Gophers Lab helped the client meet their requirements by helping them add new services to their platforms and improve their performance. As a result, Turbonomic was able to deliver better platforms to its customers, which helped them increase their savings on cloud and made the platforms & processes faster.


- Designed and implemented new services for PMC and Turbonomic
- Improved application scalability, stability, and performance
- Modernized and ported PMC's critical components from legacy systems

**Cloud Optimization Solutions**
DOMAIN

**USA**
COUNTRY

**Back-end, Front-end, Testing, Cloud, DevOps**
SERVICES

SaaS Platform | ISV

## ABOUT THE CUSTOMER

**Viki's Turbonomic is an IBM Company** that provides **Application Resource Management (ARM) software.** The software platform is used by organizations to assure application performance and governance, alongside lowering costs.

**ParkMyCloud (PMC), a Turbonomic company,** is a cloud-based SaaS platform that helps enterprises automatically identify and eliminate wasted cloud spending. PMC is trusted by over 1,500 companies, including multinational firms, in healthcare, finance, and professional services.

## CUSTOMER REQUIREMENTS

The customer was looking to upgrade Turbonomic and the ParkMyCloud platforms to provide better solutions to its customers. Turbonomic had the following requirements:

### Turbonomic

- Design and implement new services such as resource suspension and smart parking recommendation generation

### ParkMyCloud

- Provide support for more cloud services to generate recommendations that save clients money
- Improve API scalability for large clients to ensure quick response
- Modernize port critical components from legacy systems
- Make onboarding easier for Azure cloud customers
- Resolve issues with horizontal scalability to handle traffic changes
- Reduce the load on DB instances to improve performance

## SOLUTION IMPLEMENTED

The customer worked with Gophers Lab to enhance the Turbonomics and ParkMyClub platforms by implementing the below solution:

### Turbonomic

- Implemented resource suspension and smart parking recommendation generation in the existing Turbonomic action pipeline from scratch in Golang
- Integrated Kafka, Redis, and MariaDB in a modular way in the Turbonomic suspension pipeline
- Designed the architecture to be compatible with both single-tenant on-premise and multi-tenant cloud-based deployment
- Ensured at least 80% unit test coverage

### ParkMyCloud

- Added support for the following cloud services:
- AWS Fargate pricing, resizing, smart parking (resize to minimum cost configuration), and using discovery engines to discover the resources at regular intervals
- Google Cloud Database recommendation generation, using resource's usage metrics
- Google Cloud Database resizing using state machine design pattern
- Azure automated onboarding, which created all the required roles, policies, and applications in the customer cloud, for selected subscriptions
- Created aggregate query tables and kept them up to date using event emission design pattern to substantially reduce the API response time and reduce the DB load by removing complex queries
- Implemented Atomic locks for work items to ensure no two workers were ever working on the same work item
- Created Caching mechanism for regularly accessed data

## TECHNOLOGY STACK

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|---|---|
| **BACK-END** | GO, python |
| **FRONT-END** | ANGULAR, ANGULARJS by Google, React |
| **DATABASES** | kafka, redis, MariaDB, MySQL, elasticsearch |
| **CLOUD** | aws, Azure, Google Cloud, Alibaba Cloud |
| **TESTING** | testify, pytest, Jest, cypress |
| **TOOLS & FRAMEWORKS** | TestRail, Jenkins, docker |

## BUSINESS RESULTS

The upgrade helped Turbonomic and ParkMyCloud achieve the following results:

- The upgraded application communicated and loaded faster as it was built on the Go language
- Integrating 20 new ETL domains helped 9Spokes extract a wider set of data, process it, and provide valuable insights
- It helped 9Spokes gain more customers as it allowed them to integrate their supported software into the dashboard, along with choosing from a selection of apps to suit their needs
- Integrating the database allowed the customers to add new fields and analyze their original data in greater depth

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**Digital Engineering** **Cloud & DevOps**