

## Summary:

Bakuun.com is a travel technology startup that facilitates the booking processes between airlines, hotels, and travel agencies for better commercial and economic benefits.

We believe that automation and improvement of the processes are the future in the travel and hospitality market, connecting different stakeholders by delivering new technology that simplifies the booking process and enlarges the distribution while creating economic and commercial benefits.

The key element of our technology is that has been built without following the industry standards and without relying on third-party systems, the flexibility of our tech allows us to improve and create new products based on market needs.

Bakuun helps the airlines saving money in hotel booking in the event of a flight delay or cancellation, by offering them dynamic hourly rates based on their passenger's length of stay until the next flight. We share also that dynamic hourly room rates via co-brand solution with Airports and Hotels.

It is also the first online booking platform with 0% commission for the reservation of rooms and can offer others 4 types of reservation on the same platform such as Room by Hours, Meeting Rooms, Travel Packages and Share your Rooms partner program.

## Challenges faced On-premises:

- No redundancy.
- Complex infrastructure data backups.
- No fault-tolerance.
- High latency in website responses.
- High latency in static content delivery.
- High content storage costs.
- Complex infrastructure monitoring setup.

Bakuun.com

### Website:

<https://www.bakuun.com>

### Founded Date:

Jul 15, 2018

### Legal Name:

Bakuun.com Ltd

### Founder:

Marco Bacchilega

### Headquarters Regions:

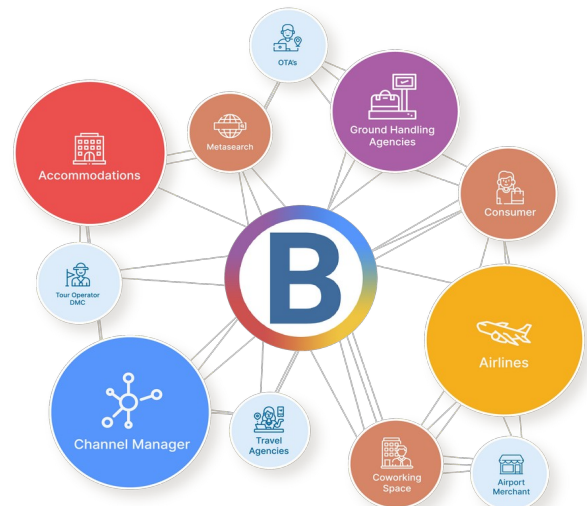
Asia-Pacific (APAC), Association of Southeast Asian Nations (ASEAN), Southeast Asia

### Industries:

Aerospace, Hospitality, Hotel, Travel

### Contact Email:

[info@bakuun.com](mailto:info@bakuun.com)



## Reason for choosing AWS:

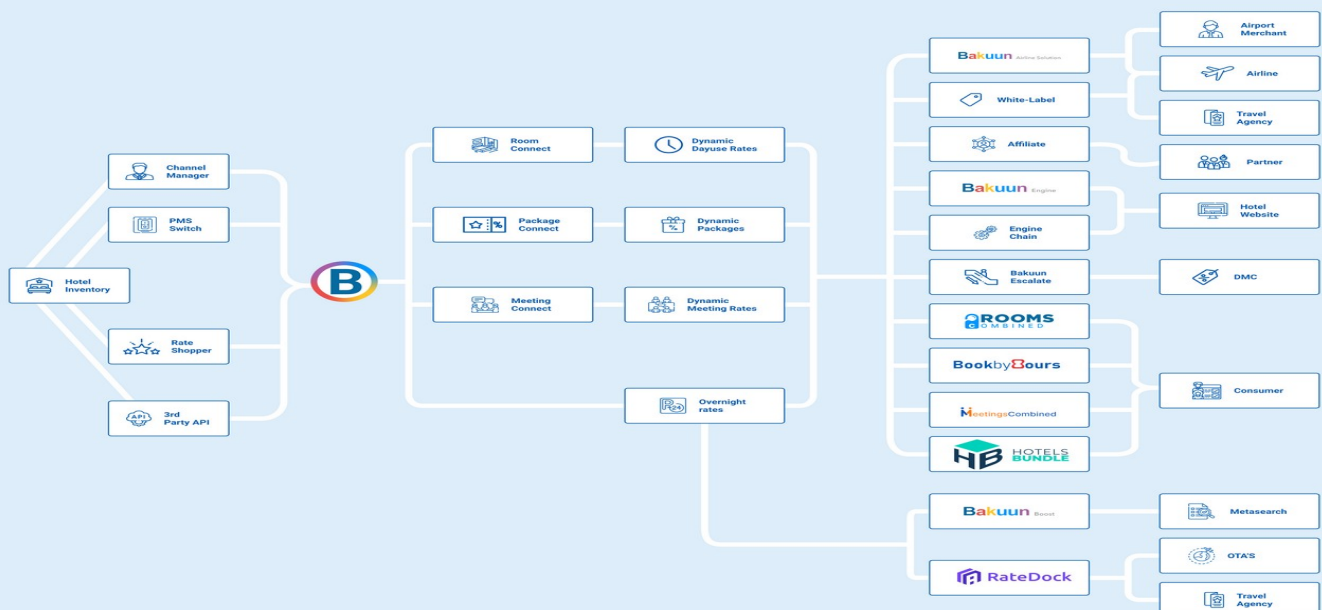
As the on-premises infrastructure was falling short to our requirements, we needed a solution where our website can maintain high availability regardless of the size of the website requests without sacrificing performance. The solution also needed to ensure that incoming traffic is properly distributed among the servers deployed in the infrastructure and the infrastructure scales automatically with the ever-growing needs with minimal to no manual intervention.

This was when we decided to go with AWS where we were able to take advantage of the wide range of services available on their cloud platform to upgrade the availability, scalability and performance of our website.

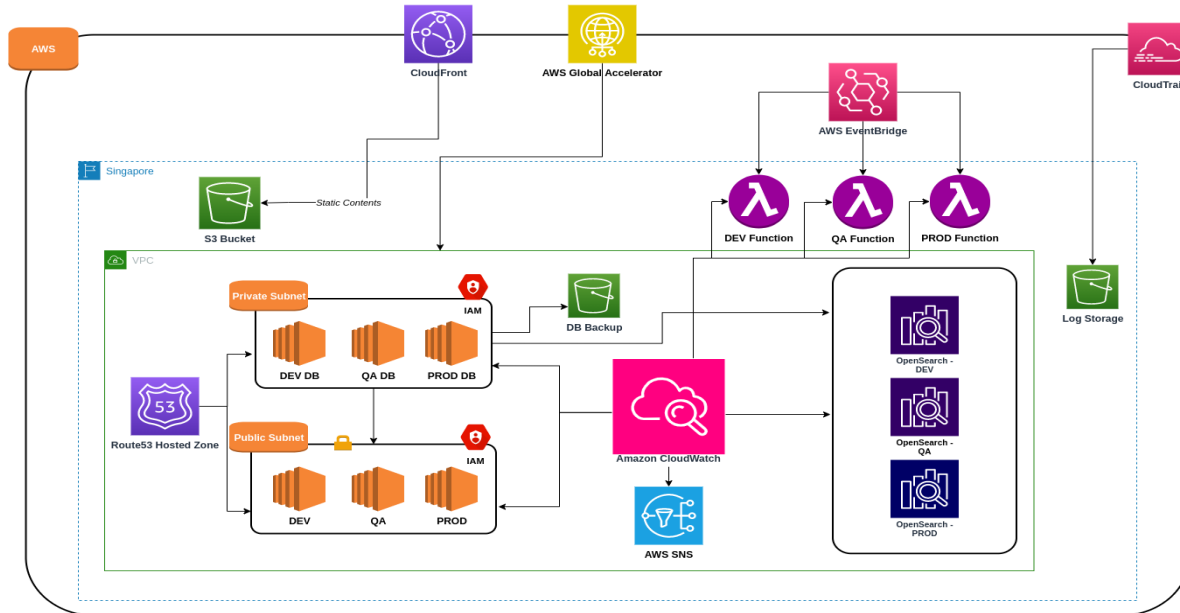
With AWS, we didn't have to worry about the resource depletion and setting up the complex infrastructure for something like load balancing and instance scaling. It was all possible with a few clicks and some custom changes and we were able to achieve the expected results for our website within a short amount of time which took months on the on-premises environment with no avail.

With our web tier on AWS, we were able to concentrate on the website development and enhancement without worrying about the infrastructure layer. Once the infrastructure setup was complete, we almost never had to perform any manual changes to scale the infrastructure or repair it where the infrastructure automatically scaled to needs of our requirements while maintaining the availability and performance of our website.

Due to the global reach of AWS, we were also able to find an AWS data center for our cloud resources in our geographical proximity which also helped us to reduce the latency between our clients which were mostly from the same region as our website. This was also a plus factor which added up to enhancement of the performance of our website.



# Our Infrastructure on AWS



Bakuun AWS Architecture

Taking advantage of the wide range of services made available by AWS, we were able to achieve our ideal infrastructure on AWS. We first migrated our on-premises web server data to AWS EC2 instance and with the help of highly elastic and scalable nature of AWS, we were able to test and quickly switch between the instance types to find a perfect fit for our web tier requirements, both in aspects of costs as well as performance.

We have migrated our all 3 web tiers as well as DB tiers to AWS EC2 instances where the web tier lies in the public subnet while the DB tier lies in the private subnet for security of the database data. All the DB backups are pushed to private S3 buckets everyday and also, an EBS lifecycle policy has been setup to take snapshots of all the EBS volumes in-use by the infrastructure on weekly basis. We are also using Route53's hosted zone to setup a private dns server on the AWS infrastructure to facilitate better communication with each of the resources using dns. Just like the Web and DB tier, we also have 3 environments for OpenSearch to store and analyze data collected from the Web and DB tiers. All 3 of our OpenSearch instances are launched in a private VPC subnet to ensure data security and connectivity from the local system only. All 3 OpenSearch instances are also getting continuously backed using the build-in snapshot functionality of the service. As it is a managed service, we don't have to worry about the security, management and monitoring of the underlying infrastructure but just the upper layer of it.

We also have 3 lambda functions to perform API related processing for all 3 of our environments which are triggered every 2 minutes by AWS Event-Bridge. AWS Cloudwatch is used to monitor all 3 of our lambda functions, our 6 EC2 instances and our 3 OpenSearch instances and notify us using AWS SNS whenever an alarm breach occurs so that our management team can take the necessary actions required.

As we are working on expanding our services to the other regions as well, we are using AWS Global Accelerator to facilitate inter-region load balancing thus allowing us to maintain a highly fault-tolerant and scalable architecture. All the API activities inside the account are continuously monitored by AWS Cloudtrail where the logs of which are stored in a private S3 bucket with data integrity option enabled. Strict IAM policies are setup to ensure we follow the security best practice of least privilege wherever necessary.

AWS Cloudfront is being used to serve our client's static web content hosted on AWS S3 bucket to the internet providing lowest latency to the contents being served which has also helped in the overall load time of the website. This way, we were able to achieve our goals with AWS and from the day of setup till now, we have been enjoying stability and there haven't been many times when we had to look back at our infrastructure for modification or hardware issues and even if we must do so, it has mostly been to apply security patches to our instance or the website code that we manage.



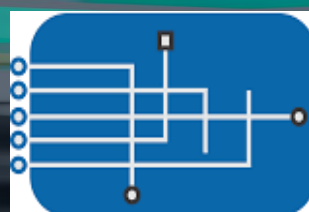
## Services Used:

S3, EC2, AWS Global Accelerator, AWS CloudFront, IAM, VPC, AWS OpenSearch, CloudWatch, SNS, Lambda, CloudTrail, AWS Route53, AWS EventBridge.

## Benefits of using AWS:

- Least management overhead with little to no manual interventions required to manage the services provided.
- Scaling in seconds. As compared to our infrastructure on-premises, we had to go through a lot of hassle to upgrade the resources of our servers. On AWS, it can be done with just a few clicks.
- Improved and faster load times of our website and applications deployed on AWS.
- Better and high speed content delivery.
- Backing up our data has also become easy with AWS provided solutions.
- We are able to achieve automation of most of our API tasks using AWS.
- Continuous monitoring of the infrastructure without any complexity.

*Our team offers the most up-to-date, sustainable IT solutions for which clients consistently praise us for our consultative approach and results-driven engineering practice.*



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