



Elevating FlyAkeed's Travel Management: A Comprehensive AWS Infrastructure Transformation with Enhanced Security, Performance, and Cost Efficiency



attention.
always.



About the Customer:

Trusted by thousands of passengers, tourists and corporate professionals, FlyAkeed is a leading travel and expense management solutions provider that offers seamless travelling services to its users across the Middle East and the world. With its 24X7 booking facility and flexible flight deals, FlyAkeed is poised to take its air travel services to a whole new level. The company's innovative approach enables businesses to provide world-class flight booking experience to its users 24X7. Gone are the days of cumbersome air ticket reservation and booking procedures; FlyAkeed introduces a new era of travel management marked by automation and intuitive features.

The Need

Since FlyAkeed was grappling with the above-mentioned challenges, there was a growing consensus among its key people that the brand might not be meeting their customers' overall booking experience. To solve these issues, FlyAkeed was seeking a partner who could deliver a fast, intuitive and proactive solution to the business challenges it was faced with. After approaching Aspire Systems, FlyAkeed realized that Aspire seemed to tick most, if not all the boxes for a perfect technological partnership.





Aspire's Solution

Beginning with its primary objective, our AWS experts located and limited public access to identity and resource-level access authorizations across FlyAkeed. Moving forward, Aspire's experts analyzed the pain-points that hampered the client from optimizing its business infrastructure. Our AWS experts effectively deployed cloud server support in a short amount of time.

Aspire strongly recommended, proactive infrastructure monitoring feature to the Customer who immediately approved it considering its benefits in future. As a proactive measure, Aspire helped FlyAkeed fix certain imminent problems as functionality, integration and customization of its Cloud infrastructure and monitoring. As a proactive measure, Aspire helped FlyAkeed fix certain imminent problems as functionality, integration and customization of its Cloud infrastructure and monitoring. After successful completion of this project, Customer and Aspire observed and noted the following key results as part of our implementations that are worthy of mentioning.

- » **AWS Organization:** All the FlyAkeed's AWS accounts are managed under one organization for central governance and management of all accounts with AWS Organizations. We were able to control access to any member account.
- » Access to the users is provided with **Single Sign On (SSO)** by integrating the identity center with Azure AD. And Access policies are provided according to the user roles like Administrator, read-only policies.
- » Deployed **AWS WAF WebACL** on top the application to protect against common web exploits, anonymous request patterns. Implemented IP whitelisting and blacklisting to control access and reduce the risk of automated attacks.



- » **Identity and Access Management (IAM):** Implemented least-privilege access for IAM users and roles based on specific requirements and user roles. Custom policies are defined as per requirements to allow the permissions to IAM roles.
- » **AWS Inspector** scans are performed on monthly basis to all EC2 servers (Ubuntu servers). As per the scan reports from the Inspector scans, the patching is performed with a pre-defined process of raising a change request ticket with the customer and publishing the findings of the vulnerability scans. The patching activity is performed once the customer approval is provided for the same.
- » **Security Hub** is configured/enabled for collecting all security data across AWS accounts, AWS services, and supported third-party products and to analyze our security trends and identify the highest priority security issues. As per the findings the remediations are planned after informing the customer and getting the required approvals.
- » **CloudWatch Utilization:** Our monitoring strategy leveraged AWS CloudWatch features, including dashboards, alarms, and container insights, focusing on ELB, EC2, ECS, lambda, DynamoDB and performance insights for RDS instances. By enabling CloudWatch, we were able to collect and track real time metrics, which are variables you can measure for your resources and applications and, we have applied CloudWatch logging for all the services to use them for troubleshooting.
- » CloudWatch alarms are configured for a set of predefined KPIs like the CPU utilization, Disk utilization and Memory utilization. All notifications sent via email to the team through SNS topics.



- » Enabled **CloudTrail** events for account auditing continuous monitoring, assessment, and management of AWS resource configurations. It provides a detailed view of resource configuration history and change. All kinds of account level activities are recorded and utilized for investigation purposes.
- » Utilizing the capabilities of **AWS Config** for maintaining compliance across all the AWS services in the workload in each AWS account resulting in management of resources in better and secure way.
- » We have also configured New Relic for Application Performance Monitoring (APM) for observability of application related metrics and performance metrics like the errors, response times etc.
- » We are harnessing the power of **AWS X-ray** to keep monitoring the application traces to deep dive into the errors and trouble shooting. The utilization of AWS X-Ray has led us to clear up many performances related issues with the application.





Cloud Cost Optimization Cost Analysis and optimization strategies:

- » Regular cleanup operations helped the Customer efficiently use its resources and cut expenses. Recognized and removed excess resources to improve cost control on a periodic basis with the help of monthly audits and analysis of incurring costs.
- » Reserved RDS Instances: Purchased Reserved Instances for long-term database workloads to save more than 30% of costs when compared with on-demand instances.
- » Compute savings plan: Purchasing the computer saving plan has resulted in saving more than 25% of costs when compared with on-demand computer resources. This is implemented for EC2 instances.
- » **Automated Backups:** Configured automated backups for AWS services like RDS, EC2, DynamoDB and EBS with a retention period of 1 week for both Prod and Non-prod environments. Automated backups are configured for EBS volumes and EC2 AMIs. The old snapshots and AMIs are purged automatically using a Lambda function.
- » **Data Encryption:** Ensured all storage services like S3, EBS volumes, RDS, secret manager is encrypted using customer-managed keys in AWS Key Management Service (KMS). The encryption is configured both at rest and in-transit.





AWS Services and technologies leveraged

1. **Compute:** EC2
 2. **Database:** Aurora MySQL, DynamoDB, DocumentDB
 3. **DNS:** Route53
 4. **Backup:** AWS Backup
 5. **Monitoring:** CloudWatch, New Relic
 6. **Network:** VPC
 7. **Operating System:** Linux
 8. **Infrastructure Provisioning:** Terraform
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Best Practices Followed

1. Data protection and key management
2. Proactive monitoring
3. Network security
4. Application security
5. Infrastructure as a code -Terraform
6. Governance and security





Key Results:

Centralized Management: All AWS accounts are now managed under one organization, facilitating better governance and control.

Enhanced Security: Implemented robust security measures, including IAM best practices, WAF protections, and proactive vulnerability scanning.

Improved Monitoring: Leveraged CloudWatch, New Relic, and AWS X-Ray for effective performance monitoring and troubleshooting.

Cost Efficiency: Achieved significant cost savings through Reserved Instances, Compute Savings Plans, and efficient resource management.

Automated Backups and Encryption: Configured automated backups and ensured data encryption to safeguard critical information.



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