

The TiLa logo consists of the letters 'TiLa' in a bold, white, sans-serif font. The 'i' has a dot, and the 'L' is a simple vertical bar. The background of the entire page is a photograph of a person's hands typing on a laptop keyboard, with a large blue circular graphic overlaying the top and right portions of the image.

A CASE STUDY

TiLa- A Modern Lifestyle Retail E-commerce
Reinvents its Online Operations by Embracing
DevOps Practices with CloudThat

WHAT TO EXPECT FROM THIS CASE STUDY?

The TiLa team needed an intuitive way to implement standard DevOps procedures to support high traffic as per the growth of their business, hence ensuring uptime of all the services enabling business continuity.

Together with CloudThat they embraced DevOps practices for seamless business continuity in their operations by leveraging our expertise.

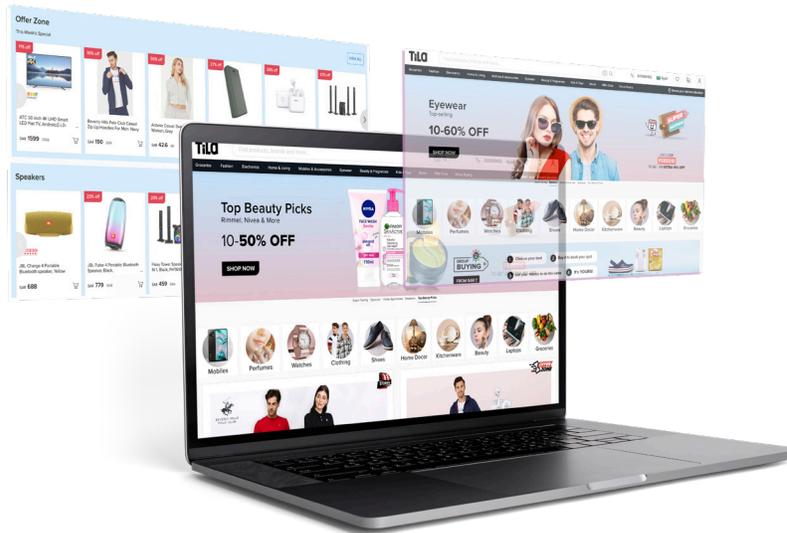


● About TiLa

TiLa is a modern lifestyle retail e-commerce brand established and launched in Saudi Arabia in 2020. With an exciting range of products across its Fashion, Lifestyle, Electronics, and Groceries categories, TiLa leverages innovation while retaining Arabian traditions and culture.

● About CloudThat

CloudThat is a renowned name in cloud consulting & training services since 2012. We have a global presence serving clients from 28+ countries. As an AWS Advanced Consulting Partner, we have helped small, medium, and big organizations to migrate to the cloud and reap the benefits of cloud adoption.



Voice of our happy client



We quickly needed migration from legacy monolithic servers to AWS with containerization and the entire process to be driven by best DevOps practices and CloudThat made that happen for us

- Ketan Purohit
TiLa

● The Challenge

With an ever-expanding customer base, the monolithic applications used for TiLa's IT environments failed. They were on the look-out for a focused, fault-tolerant HA (Highly Available) application hosted on the AWS Cloud to scale their business. They approached CloudThat to enable DevOps in their organization and adopt best -practices for managing their applications on the cloud.

● The CloudThat Solution

Our ardent team of DevOps practitioners worked closely with TiLa's development team to adhere to DevOps' best practices and deploy the new application on AWS infrastructure. The functions were split into different domains: infrastructure, monitoring and observability, security, networking, and CI/CD Pipelines.

Applications were deployed across multiple environments namely development, pre-production, and production.

Network-level separation of infrastructure for each of these environments was ensured.

Design of highly available, scalable micro-services infrastructure on AWS.

Design of highly available failover cluster setup for databases and Apache. Services.

Establishment of a network connectivity between cloud and office locations spread across the globe was realized.

Leveraged DNS routing to resolve internal service endpoints and internet-facing endpoints.

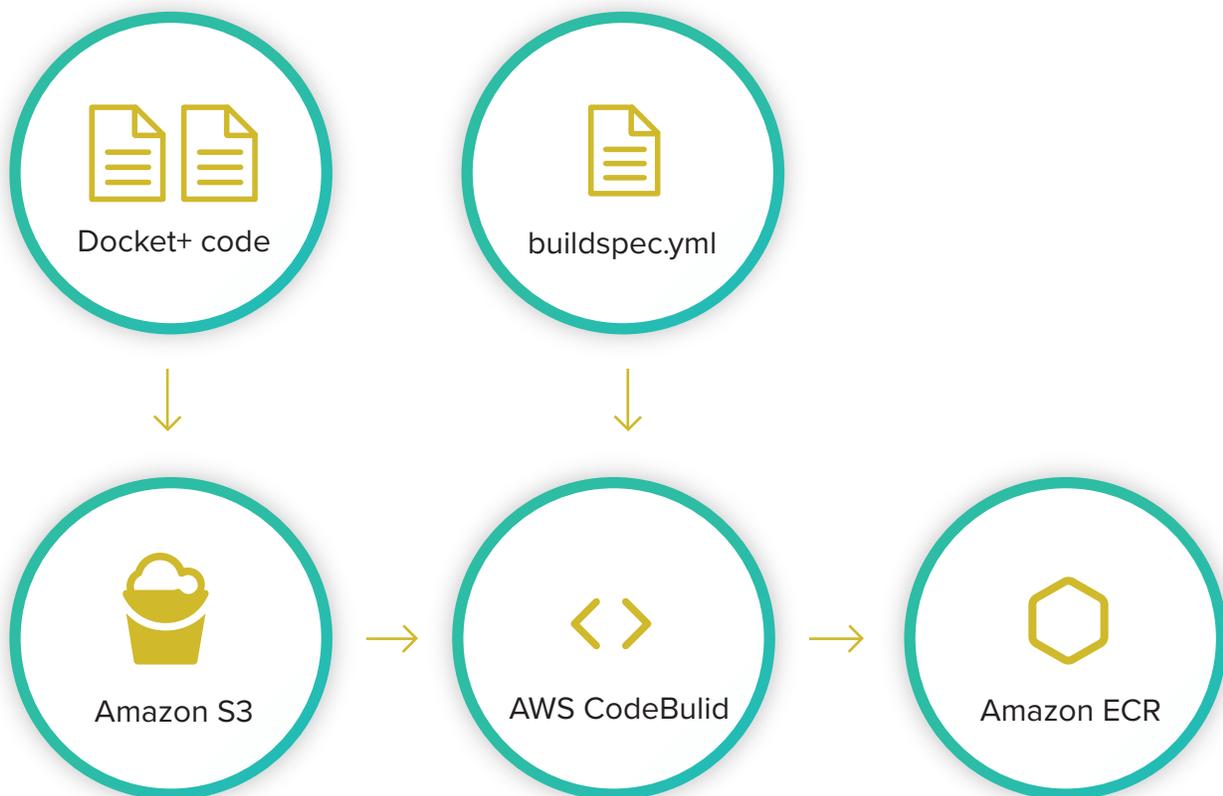
Implemented CI/CD, supporting hotfixes, rollback on failure, multi-environment deployment.

Implemented Identity and access management and detective controls with incident response in place.

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● The CloudThat Build Flow Approach

The following pictorial representation depicts a detailed build flow that we employed during the project. We used a Dockerfile to ensure an automated build that executes several command-line instructions in succession. Next, the Amazon S3 was put into action for online backup and archiving of the code. The AWS CodeBuild helped us to fully manage continuous integration services by compiling the source code and generating the required ECR image. Finally, Amazon ECR services were utilized for high-performance hosting to reliably deploy application images and artifacts.



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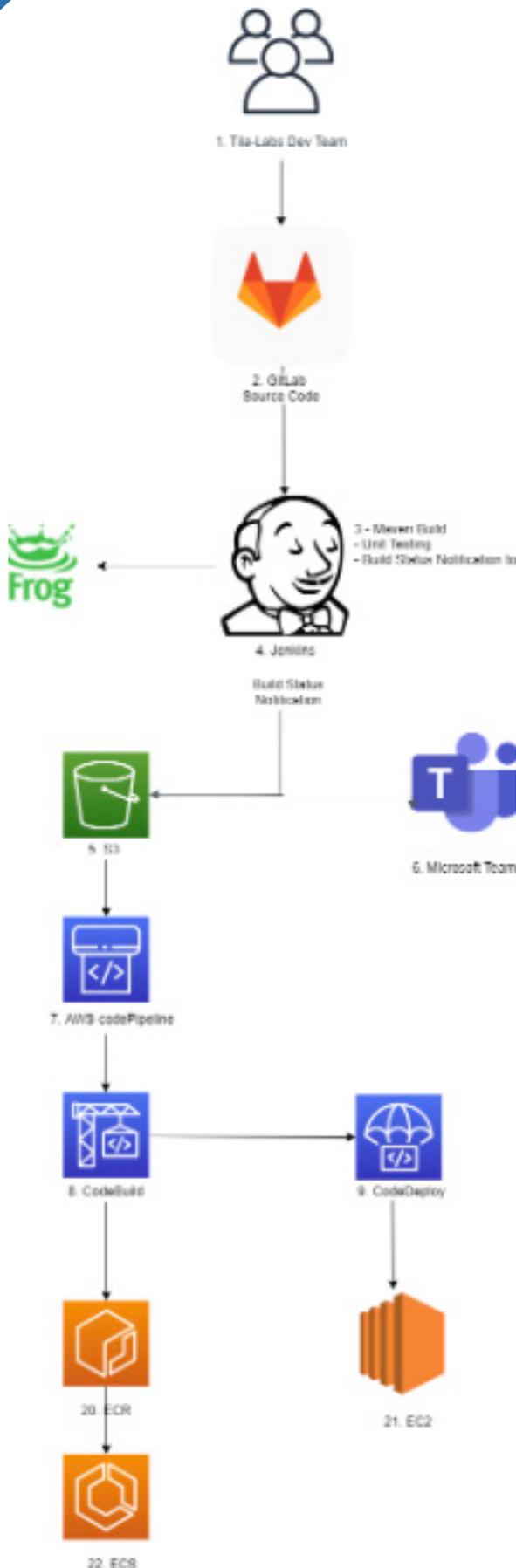
CloudThat Approach to Continuous Integration & Continuous Delivery (CI/CD) Flow

The following pictorial representation depicts the entire CICD flow, which involves using GitLab as a source code repository, Jenkins as a CI tool for the build, JFrog Artifactory as artifact storage, ECR as container registry, and AWS CodeDeploy to automate deployment.

The workflow is as follows:

A change in the code in GitLab, will trigger the Jenkins build and push the build output into S3. Then the Code Pipeline gets triggered, building the docker image pushed to ECR. Finally, the deployment occurs through the ECS cluster, pointing to the new task definition, which has changed. The notifications are sent over to Teams for every successful or failed commit, build, and deployment

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● Third Party Technologies Used

Different third-party technologies were utilized in this project. The salient one with their respective roles is described here:



An open-source Java APM with which we can have features like tracing capture for slow requests and errors, enable continuous profiling, have response time breakdown charts, service call capture, and aggregation. Moreover, we alerted system invoking as teams, email-based on conditions, enabling live monitoring and alerting on the java application.



An open-source system monitoring and alerting toolkit. Prometheus supports features like having a multi-dimensional data model with time series data identified by metric name and key/value pairs. In addition, we have enabled metrics from ECS Cluster instances and EC2 instances and ECS tasks to have metrics on memory CPU and disk utilization and alerting system integrated with teams and email.



● How AWS Services Were Used as a Part of the Project

01

To ensure network-level isolation across environments dev, stage, pre-prod, and production, centralized services termed management are placed under different VPC. The security groups are configured as a virtual firewall for EC2 instances to control incoming and outgoing traffic accordingly. In addition, WAF rules are in place to prevent DDoS on web applications.

03

VPN tunnels with failover are set up between VPCs and connected office networks to secure private data communication to AWS via the Transit gateway. In addition, VPC endpoints are used to connect VPC to supported AWS services privately.

05

To ensure high availability of Apache services like Solr, Kafka, Zookeeper, all are deployed as clusters on EC2 instances.

07

CI/CD implementation is in place with GitLab, Jenkins, JFrog Artifactory, AWS CodePipeline, ensuring faster deployments with approvals and blue-green deployment methodologies, helping us test features before moving prod environment.

02

VPC Transit Gateway routes are configured between dev stage, pre-prod, and production to centralized services (Management VPC) to ensure secure data transfer between environments during data sync operation and management accessibility.

04

To ensure higher control of NoSQL databases, the databases were deployed on EC2 instances for Arango, Mongo, Aerospike, Couchbase DB as clusters for failover.

06

Amazon RDS, ElastiCache, Elasticsearch managed services are deployed with high availability for MySQL, Redis, and Elasticsearch services, respectively.

08

Highly available, scalable, fault-tolerant microservices are deployed on Amazon ECS clusters across environments with Autoscaling and Application Load balancers in place.

09

Once the setup is validated and approved, a CloudFormation template is designed to perform deployment of the infrastructure for all the services, and new features are added to the same and deployed using CodePipeline. The template versions are kept in track in the version control system providing visibility to the infrastructure deployed as code.

11

Regular patching and Configuration changes are managed using AWS Systems Manager and are automated using maintenance windows. Additionally, have taken advantage of automation executions to ease the restarting, starting, stopping of instances based on failure events.

13

AWS config rules are in place to keep track of inventory changes and ensure compliance with security group rules and access key rotations

10

Infrastructure and application monitoring is in place with AWS CloudWatch, Prometheus, Glowroot, and NewRelic. Alerting systems have email, Microsoft Teams channels. AWS Lambdas are generating audit reports for known security vulnerabilities. Graylog multimode setup is deployed for centralized logging

12

Have used a trusted advisor to analyse the client's AWS resources' behaviour, identify potential security issues, and take actions based on the same.

14

AWS Inspector Assessment Template is in place for AMI compliance for CIS Operating System Security Configuration Benchmarks, and automated Assessment Runs are done every week.

● AWS Services used in the project



● The Success Saga: Metrics Speak

3-5% Downtime	→	0.1% Downtime lowered post implementation
95%-98% Availability	→	99.9% Increased availability achieved
100+ users Manual Processing	→	1000+ users Automated with IAM

A word from TiLa



I would highly recommend CloudThat to organizations setting up their own cloud infrastructure, especially the team headed by Lakhan Kriplani is awesome. I would like to quote one incident that shows the prowess of Team-CloudThat and Lakhan Kriplani. Our Solr Collection index in our production got corrupted and this we got to know at about 8:45 PM on a Friday. So, I called him, and he was ready to help instantly. We then worked until 4:30 AM the next morning, to get this resolved

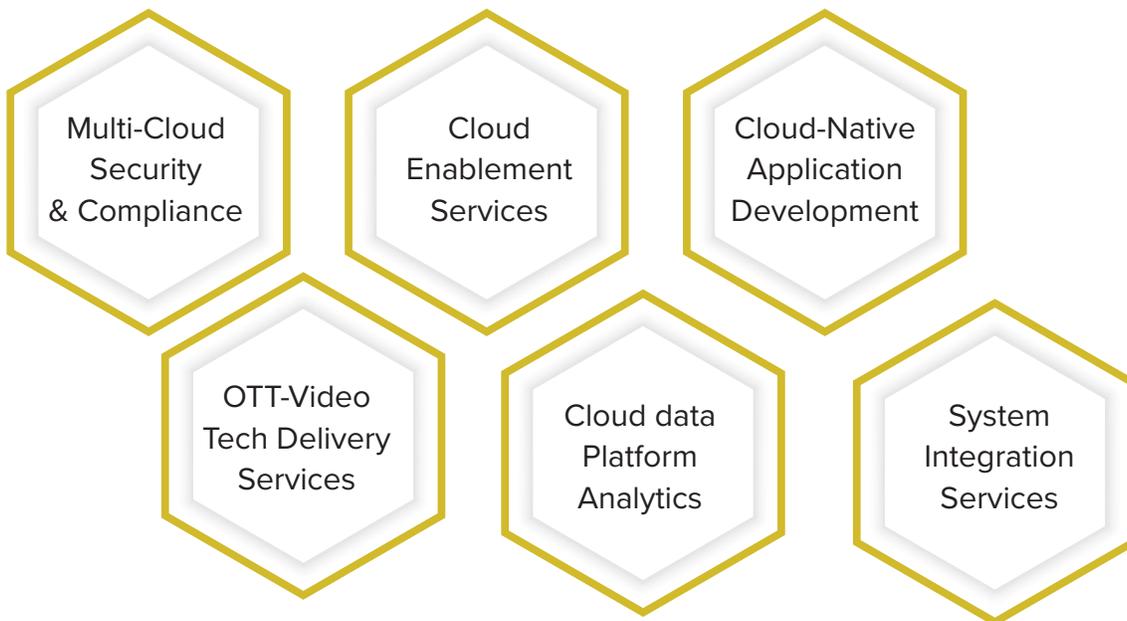
- Amit Chandra
Tila

● Our journey

CloudThat incepted in 2012 been a pioneer in consultancy services with more than a decade experience. Led by **Bhavesh Goswami, Founder & CEO**, with rich experience of implementing challenging projects for Amazon and Microsoft organizations prior to his entrepreneurial journey. We are driven by a 150+ cloud-agnostic and tech-heavy strong team facilitating organizations to accelerate cloud adoption.

Why You Should Choose CloudThat Consulting Services

We are a House of All-Encompassing IT Services on the Cloud - We offer vivid consulting services like: Multi-Cloud Security & Compliance, Cloud Enablement Services, Cloud-Native Application Development, OTT-Video Tech Delivery Services, and System Integration Services to 100+ happy clients across the globe.



● Our Industry Partnerships



Thank you for exploring this Case Study with us.
Stay tuned for cloud solutions offered by CloudThat.

Are you eager to be recognized as DevOps practices driven organization?
Why Procrastinate, Connect with us Now...

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