The Client

Tata Sky Limited (Tata Sky) is a joint venture between Tata Sons and 21st Century Fox. Incorporated in 2001 and launched services in 2006, Tata Sky is India’s leading content distribution platform providing Pay TV and OTT services. Tata Sky currently has over 600 channels and over 17 million connections in India.

The Goal

Tata Sky had an OTT app that helped consumers to stream live TV channels and watch videos on demand via mobile and web platforms. They faced multiple challenges such as frequent outages, slow backend and not so intuitive frontend. Their AWS account had 100+ servers with a monthly spend of approx. $25000. They needed an architecture solution that was linearly scalable to handle 1,00,000 concurrent users and a system with 99.99% availability. Tata Sky wanted a reliable partner to ensure 24/7 infrastructure monitoring of applications.

Tata Sky was looking to partner with a technology company who can help them build

- Android apps for mobiles and tablets
- iOS apps for mobiles and tablets
- Web app for multiple browsers
- Smart dongle app for TV

Summary

TO THE NEW along with other chosen partners by Tata Sky has been involved in rebuilding OTT platform along with back-end ecosystem for supporting Android, iOS mobile apps and tablets apps. Entire OTT platform is state of the art ecosystem providing rich and innovative features for Tata Sky customers in Indian market. TO THE NEW has also improved their existing infrastructure to support 1 million+ concurrent users and provided them with 24/7 managed services support to ensure 99.99% availability of the application.

Highlights

- Rebuilt the entire OTT platform
- Video CMS to manage the entire system
- Search and discovery engines for videos
- 24/7 monitoring of infrastructure
- Architecture solution to handle 1,00,000 concurrent users with 99.99% availability
Ensured OTP based multi-factor authentication, profile setup & management
Enabled operational and administrative tasks management in the backend system
Enhanced live video streaming capability. The VOD section covered TV Shows, Web shorts and Movies
Ensured platform specific content restriction basis the platform from which users are accessing the service such as mobile, web and dongle
Integrated Self Care Services for customer account management
Configured multiple home-screens on different platforms through backend CMS and completely customizable editorials
Developed content recommendation systems
Integrated third party services viz. a viz. Irdeto Media Manager and SMS System using multiple connectors
Captured content analytics to visualize consumption and analyse user behaviour

DRM integration, live video streaming, personalized content and recommendations, remote recording and WiFi remote were some of the other features provided in the applications.

Technical Excellence

Created responsive mobile app for Android using Android SDK, Java, XML and JSON
Created iOS app using Swift programming, Cocoa touch framework, JSON, XML, Mixpanel, Moengage, Crashlytics and Alamofire
Used Spring Boot for building web applications and APIs with Groovy, Spock and Java acting as the programming languages used for writing unit test cases
Used OpenTok for audio and video calling and Socket.io to capture events in real-time
Used MongoDB for tracking datastore
Used Elasticsearch to provide essential search and discovery related functionality
Leveraged Jenkins to setup a continuous delivery pipeline
Ensured maximum scalability on the commodity hardware by running microservices in docker containers. Orchestrated these with the help of Kubernetes
Used Chef for configuration management
Promoted inter-service communication through RabbitMQ
Ensured application monitoring through New Relic
Used Grafana for custom dashboards
Pushed real-time data to frontend leveraging Pubnub
Multi-layered, stateless microservices were set to run in docker containers and orchestrated by Kubernetes. This allowed us to achieve enough linear scalability on the commodity hardware to cater to varying degrees of load, supporting up to 10,000 users during the initial launch
Automated deployment and release management using Kubernetes supported daily builds and deployment. Enabled multiple deployments in a day as and when needed with zero downtime
### Technology Stack

**Frontend**
- Angular
- tokbox
- socket.io

**Backend**
- spring boot
- elasticsearch
- Java

**Database**
- MongoDB

**Mobility**
- android
- Java
- XML
- JSON
- Swift
- mixpanel
- moengage
- crashlytics

**DevOps**
- Jenkins
- docker
- chef
- ELK
- Nagios
- New Relic

**AWS**
- VPC
- Amazon S3
- Route53

**Other Technologies**
- Cassandra
- hazelcast
- RabbitMQ
- PubNub

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