







background

- Opera Mediaworks, the world's leading mobile advertising platform, is a part of Opera Software
- Opera Mediaworks enables advertisers to improve advertising efficiency and monetization by reaching their target audience and publishers efficiently
- Headquartered in Silicon Valley, California, Opera Mediaworks has offices in more than 10 countries
- Continuing their trend of rapid growth, Opera Mediaworks delivered more than 650 billion impressions across 18000 sites and applications monthly in Q1, 2015

talentica SPREAD YOUR WINGS

"In order to manage the business growth, our product needed to be scaled up. The biggest challenge we faced here was, doing this quickly and keeping infrastructure costs at a minimum while doing so."

- Manoj Malhotra President, Opera Mediaworks

challenges

Opera Mediaworks was serving over 22 million Ad requests a day as of December 2009. The business was expecting a growth, in excess of 1200% for the year 2014 and such a growth was naturally accompanied with some key business challenges:

- Scaling up rapidly to meet the business demand
- Restricting the response time to under 150 milliseconds
- Maintaining a competitive eCPM and keeping the cost per eCPM low

talentica SPREAD YOUR WINGS



CASE STUDY : OPERA MEDIAWORKS Managing over 8 billion ad requests on a daily basis

Simply adding hardware was never a possible solution to deliver the desired eCPM. The challenge here, was to come up with an auto scaling solution to ensure the optimum use of infrastructure without affecting performance

Sanjoy Singh, Business Head, Talentica

solution

Our solution covered the following key areas: • Database and infrastructure scaling

- Decoupling of modules
- Reducing I/O operations
- Big data analytics for faster processing.



DECOUPLING COMPONENTS



- Isolating and creating modular components that could be easily executed in parallel and in a distributed environment.
- Each of these components was capable of being scaled out individually

MAKING DATABASE OPERATIONS OFFLINE



- Introducing different caching layers Memcache (distributed caching), APC (local caching)
- Using Distributed Messaging System-Apache Kafka, combined with a Publisher-Subscriber like design pattern to overcome bottlenecks which made the response time low

DATABASE SCALING



- Setting up a customized masterslave node with read/writes on the master database and only reads on the slave database
- Vertical (partitioning) and horizontal (sharding) database splitting
- Using NoSQL data warehouses (Amazon Redshift, Auto Sharded Mongo Cluster) for quicker access to TB size data



INFRASTRUCTURE SCALING



- Handling traffic surges, by adding auto scaling capability to quickly launch new cloud instances
- Deploying monitoring tools to check the health of such a large cluster and to rectify any faulty instance
- Scaling out the Load Balancer by pointing the DNS to multiple IP addresses and using the DNS round robin for IP address lookup

DATA CRUNCHING



- Conventional computing methods were unable to process the huge volume of data generated on the platform within a given timeframe
- We leveraged Big Data technologies -Hadoop, Amazon Elastic MapReduce, Apache Spark and Apache Storm to crunch data for generating the required performance matrix

USING CLOUD RIGHT



We carried out extensive research to suggest an optimal combination of cloud services needed for the platform and implemented this using cloud best practices to maximize efficiencies and keep costs low







technology

- Programming Languages: PHP, Java, Objective C
- Mobile: iPhone, Android
- Cloud: Amazon Web Services
- Social Networks: Facebook, Twitter
- Databases: MySQL Cluster
- Big Data: Amazon EMR (Hadoop), MongoDB (NoSQL Document Database),
 Amazon Redhshift, Apache Spark
- Apache Kafka

infrastructure

- Apache Hive
- MongoDB
- Amazon EMR
- Amazon Redshift Data Warehouse



results

ENORMOUS INCREASE IN AD REQUESTS



The Talentica solution enabled Opera Mediaworks to handle over 1200% of growth in ad requests over the last 5 years

REDUCTION IN THE COST/ECPM



Talentica's solution has helped in reducing the cost/eCPM by over 94% in the past two years

MEETING SCALE DEMANDS -UNLIMITED CAPACITY



A built for scale system that has been able to handle an 1800% growth from 2013 to 2014 without the need for any architecture changes



CASE STUDY : OPERA MEDIAWORKS Managing over 8 billion ad requests on a daily basis



contact us

India

B-7/8, Anmol Pride, Baner, Pune 411045 T: +91 20 4660 4000

- www.talentica.com
 - E: info@talentica.com





Deloitte. Technology Fast50

India 2014



