



CASE STUDY

Kuoni GTA utilizes AdroitLogic UltraESB to implement XML API serving over half a billion requests per day



Kuoni GTA

INDUSTRY

Travel Services and Leisure

BACKGROUND

GTA is a world leader in the provision of ground travel products and services to the Fully Independent Travel (FIT) industry. GTA functions under the Global Travel Distribution (GTD) division of the Kuoni group headquartered in Zurich. GTA has been the power behind some of the biggest and best in travel for decades, due to the trust based on its wealth of experience, privileged relationships and the ground expertise.

GTA scours the globe to build a portfolio of tens of thousands of accommodation options, tour guide and transfer services, unique experiences, city tours, excursions, attraction tickets and restaurants from more than 50,000 suppliers in 185 countries. These supplier partners profit from dedicated extranets giving them full and flexible control of inventory, rates, yield and reservations.

Powering global travel and providing the best value and service experience, GTA processes over 21,000 bookings every day, electronically and efficiently, and sells 12 million room nights in more than 25 languages online and throughout the world. The GTA XML API enables Online Travel Agencies and Travel Suppliers to access GTA's vast global travel content via an XML interface for integration into their reservation system or website, and powers approximately 2,000 white-labelled websites.

CHALLENGE

Build a stable and scalable integration platform to allow expansion of capacity, while accommodating continuous improvements and innovation

SOLUTION

AdroitLogic UltraESB

BENEFITS

High performance integration platform with sub-second latency, allowing aggregation of information from multiple systems with complex integration needs

CHALLENGE

As a part of modernizing its IT infrastructure, GTA planned to procure an Enterprise Service Bus (ESB) in late 2013. A key focus of the initiative was to provide a stable and scalable system to allow GTA to expand its capacity to handle more requests and more clients, while enabling the platform to accommodate continuous improvements and innovation.

An independent consultant was chosen by GTA to evaluate shortlisted ESB solutions, and to perform a proof of concept to evaluate the suitability of the products. The evaluation thus included various realistic scenarios as well as performance tests.

“ AdroitLogic’s UltraESB is central to our future state architecture integrating our key business applications. UltraESB has provided GTA technology platform with the required performance, reliability and high availability to support our business growth. The solution we have implemented allows GTA to successfully scale in the cloud.”

Christopher Branagan | CTO
Kuoni GTA

SOLUTION

Based on high degree of suitability and robust performance, GTA selected AdroitLogic’s UltraESB as the Enterprise Service Bus (ESB) and engaged with AdroitLogic to design, build, test and deploy an UltraESB based integration solution.

The primary architectural design was based on developing a front end XML adapter service, which intercepts all incoming XML requests, and performs authentication and validation. This would form the basis of the GTA XML API [1]. Based on the request type, dynamic request messages are then forwarded to three main services called the Price Service, Search Service and the Booking Service.

The Price Service connects to an enterprise level high speed cache (Coherence) cluster providing price information aggregated from various enterprise systems at sub-second response time, to achieve the GTA objectives of scale and performance. The Search Service invokes queries on an Endeca search engine for availability information. Some incoming requests require information to be aggregated from both the Search Service and Price Service.

The Booking Service connects to the backend booking and reservation systems to perform operations related to booking requests. This service in turn performs validation and orchestration required to confirm a booking, back to the client.

In addition to the dynamic queries, static hotel information queries are performed periodically by the clients which then cache the results locally (i.e. downloadable cache requests). For this type of requests, the system is required to respond back with all of the static hotel information, which could typically be in the range of several megabytes, sent asynchronously after being aggregated and prepared.

The Search and Price queries includes requests for a single query as well as a batch of queries. For batch requests, the solution splits each request into segments, and performs optimal connections to Coherence cache or Endeca, and then aggregates the results back into a single response retaining original order, which is then submitted back to the client.

[1] <http://www.gta-travel.com/en/buy-from-us/how-to-work-with-us/gta-xml-api>

DEPLOYMENT

Deployment comprises of a total of 63 UltraESB (ESB) instances running on 11 physical servers. There are seven physical servers each running 5 ESB instances, where 3 out of 5 instances handle a larger portion of load, such as the dynamic Booking, Hotel and Price requests. Four of the physical servers have 7 ESB instances each, out of which 2 instances are dedicated to larger volume cache requests like the downloadable cache. Rest of the instances handle the data push to the platform.

In addition to the abovementioned main deployment, Kuoni GTA utilizes independent UltraESB deployments for tasks such as data synchronization and bridging HTTP to JMS. The main deployment caters to over 2,000 travel partners, making over 8,000 requests per second through the GTA XML API, with the load increasing annually.

ACHIEVEMENTS SO FAR

The UltraESB has been in 24x7x365 production use at Kuoni GTA since 2014, and has successfully performed to keep the request times at optimal levels to serve Kuoni GTA business requirements, while optimizing resource utilization. The platform currently supports over half a billion searches a day, and responds at a 0.47 sub-second response time.

Further, AdroitLogic has been engaged by Kuoni GTA, in order to obtain architectural and design guidance related to the integration flows, while continuously obtaining review, guidance and verification support for the integration flows developed by its outsourced technology partner.



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