basho

Joukou

INTRODUCTION

Joukou is a New Zealand based integration platform services company (iPaaS). They have been a Basho customer for over three years and offer Riak KV as part of the services that they host for their customers. Joukou allows tenants to quickly, cost effectively, and securely implement integration projects involving any combination of cloud resident and on-premise endpoints, data sources, or applications. This is achieved by leveraging Joukou's capability to develop, deploy, and manage integration flows from multiple endpoints securely. As of 2015, Joukou is an open source project under the Apache 2.0 license available on GitHub.

Joukou is designed to support cloud integration, business to business integration, API publishing and management, and mobile application integration. Because Joukou is based in the cloud, it facilitates rapid integration and is an effective tool for projects requiring an agile approach and rapid deployment.

Joukou was founded in 2011 and specializes in data integration, analytics, and APIs. Joukou uses Riak KV primarily as a highly available, distributed datastore for all data persistence. All data is stored in a JSON format.

Joukou's customers use Riak KV to solve business challenges that include:

- Real time datastore
- Data integration
- Data repurposing (e.g. re-publishing data as an API endpoint)
- Data warehousing
- Data insights

JOUKOU'S BUSINESS CHALLENGE: PROVIDING CUSTOMERS WITH SCALABLE, LOW LATENCY SOLUTIONS AROUND THE WORLD

As Joukou's service is on-demand, it allows for system and data requirements to be scaled incrementally. This saves organizations from the typical costs associated with developing a traditional integration platform, while still gaining all the benefits, such as enterprise consistency, quality of service, and long-term maintainability.

Joukou is best utilized for projects where the use of a high-end, on-premise integration platform, even if already in place, would not be easy to justify due to integration times, cost, deployment complexity, internal skill requirements, and custom development requirements.

Prior to choosing Joukou with Riak KV as a datastore, customers were using internal, custom built, traditional relational databases that lacked the scalability and flexibility of a hosted NoSQL solution. These relational database offerings had high implementation costs and weren't meeting business needs.

As a platform provider, managing costs and scaling on-demand are a challenge. Joukou must ensure their customers are provided with scalable, low latency solutions for data integration and data insights. This must be achieved without constraint from the datastore to ensure massive scalability as customer data sets grow.

> " As a hosted open-source solution, our challenges are fast time to market and controlling costs. With Riak KV we were able to offer a highly resilient, highly available data store quickly and easily with very low cost of operations using commodity hardware. "
>
> - Fabian Cook, Software Developer at Joukou

THE SOLUTION: RIAK KV, A POWERFUL, SCALABLE, GLOBALLY AVAILABLE DISTRIBUTED, NOSQL DATABASE

In selecting a solution to help solve their business needs, Joukou had the following key criteria in mind:

- **Scalability:** They required a solution that could scale to handle massive amounts of data

- **Global availability:** Joukou's customers are global. The solution they selected had to provide the same high-performance experience around the world.

- **Simplicity of Operations:** Riak KV's simplicity is what originally attracted Joukou. They wanted features that were easy to use.

The Joukou team considered several other solutions including: Cassandra, MongoDB, RethinkDB, ElasticSearch, and CouchDB, but ultimately chose Riak KV for its scalability, reliability, and ease of operations.

> *What surprised me most was that there was not a 'where' operator. Data that would have been obtained via query is now stored alongside other relevant data, allowing for a single key lookup. It is easy to use and the supporting documentation is very helpful.*
>
> - Fabian Cook, Software Developer at Joukou

JOUKOU'S RIAK KV SOLUTION

To address its customers needs, Joukou uses Riak KV as a datastore that provides three services to its customers:

Joukou RESTful API

- A RESTful API implemented using Node.js for the Joukou platform, utilizing Riak KV as a datastore. This drives the front-ends and is integrated with Joukou Flow for executing flow based programming networks.

Joukou Flow

- Backend integration service, which implements the NoFlo (noflojs.org) flow-based programming protocol. This is a WebSocket based protocol for interaction with flow-based programming networks executing on the Joukou platform. It may be used as a sub-graph of other NoFlo compatible runtimes, or as the primary graph. Flow based programming networks are implemented as a graph of Docker containers orchestrated via the CoreOS Fleet API and passing messages between each other over RabbitMQ. The RabbitMQ messages are persisted to Riak KV for auditability, replayability, and high availability.

JSON Datastore

- Storing JSON data for users, connectivity details, company details, all flow components, and metadata about the components; e.g. the Docker registry and image name.

JOUKOU'S RIAK KV BENEFITS

The iPaaS market is poised to dramatically grow over the next five years due to several factors including, the explosion of cloud service integration, mobile application integration, enterprise API publishing and management, and the Internet of Things.

The emergence of a New Zealand hosted agile integration approach means corporate and SMB's can remove the high cost and complexity of integration due to Joukou's low entry cost, ease of use, and scalability.

The business benefits that Joukou has seen since implementing Riak KV include:

- High resilience and data redundancy
- Massive scalability
- Fast time to market
- Low development and implementation costs

> *Riak KV is very reliable. We run it across three different clusters, and the results are very good. It is simple, reliable, and consistent. We don't have to think about simplicity of replication when we are building business logic on top of it.*
>
> - Fabian Cook, Software Developer at Joukou

ABOUT BASHO

Basho, the creator of the world's most resilient databases, is dedicated to developing disruptive technology that simplifies enterprises' most critical distributed systems data management challenges. Basho has attracted one of the most talented groups of engineers and technical experts ever assembled devoted exclusively to solving some of the most complex distributed systems challenges presented by Big Data and IoT.

Basho's database, Riak® KV, the industry leading distributed NoSQL database, is used by fast growing Web businesses and by one-third of the Fortune 50 to power their critical Web, mobile and social applications. Built on the same foundation, Basho introduced Riak TS, which is the first enterprise-ready NoSQL database specifically optimized to store, query and analyze time series data. Basho also provides Riak integrations for a variety of Big Data technologies like Apache Spark, Redis, Mesos, and Apache Solr.

For more information visit Basho.com which is full of interesting use cases, customer case studies and product detail, or docs.basho.com for technical documentation.

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