

1. 2019 Spring NGDS Documents	2
1.1 Data	2
1.1.1 AA: Hard-Coded Data	2
1.1.2 API/Database Test	3
1.2 Diagrams	3
1.3 Planning Meeting Notes	7
1.3.1 Sprint 1	7
1.3.2 Sprint 2	8
1.3.3 Sprint 3	8
1.3.4 Sprint 4	9
1.3.5 Sprint 5	9
1.3.6 Sprint 6	10
1.4 Resources	10

2019 Spring NGDS Documents

Welcome to your new documentation space!

This is the home page for your documentation space within Confluence. Documentation spaces are great for keeping technical documentation organized and up-to-date.

Next you might want to:

- ☐ **Customize the home page** - Click "Edit" to start editing your home page
- ☐ **Check out our sample pages** - Browse the sample pages in the sidebar for layout ideas
- ☐ **Create additional pages** - Click "Create" and choose "Blank Page" to get started
- ☐ **Manage permissions** - Click "Space Tools" and select "Permissions" in the sidebar to manage what users see

Search this documentation

Popular Topics

No labels match these criteria.

Featured Pages

Content by label

There is no content with the specified labels

Recently Updated Pages

- [Sprint 6](#)
Apr 01, 2019 • created by Isaac Reynaldo
- [API/Database Test](#)
Mar 27, 2019 • created by Luis Herrnsdorf
- [Resources](#)
Mar 18, 2019 • updated by Isaac Reynaldo • view change
- [Sprint 5](#)
Mar 18, 2019 • updated by Isaac Reynaldo • view change
- [Diagrams](#)
Mar 18, 2019 • updated by Isaac Reynaldo • view change

Show More 

Data

AA: Hard-Coded Data



Stress Test.pdf

API/Database Test



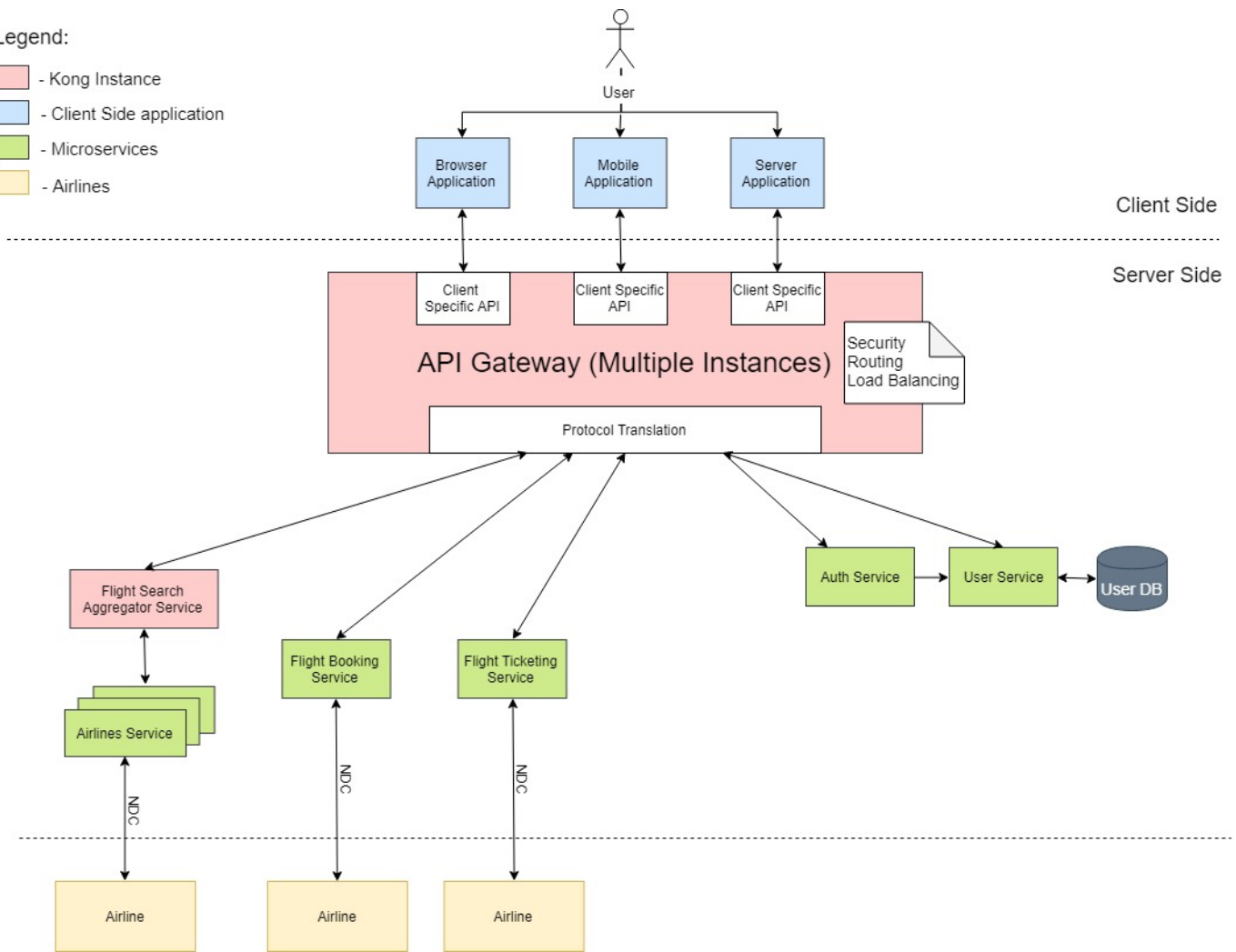
Stress Test.pdf

Diagrams

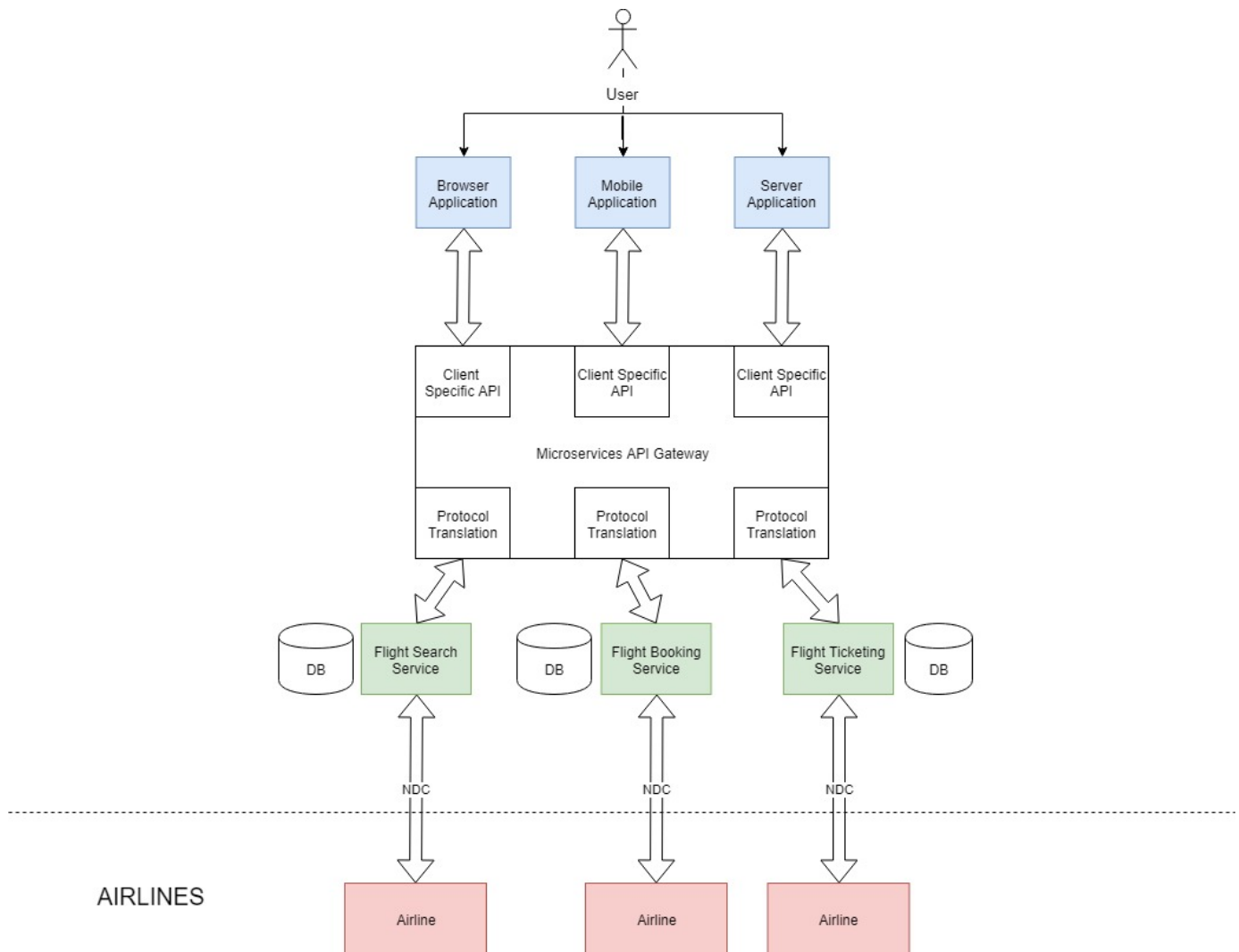
Microservice Implementation v2.

Legend:

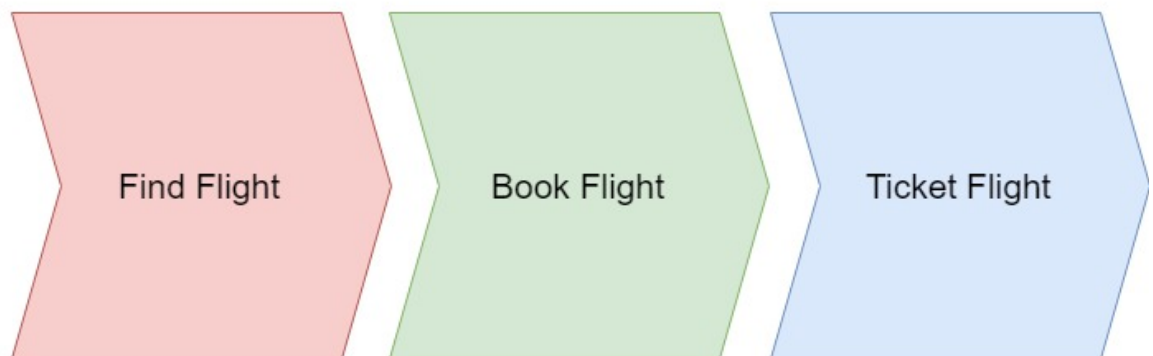
- Kong Instance
- Client Side application
- Microservices
- Airlines



IDEA for MicroService implementation.



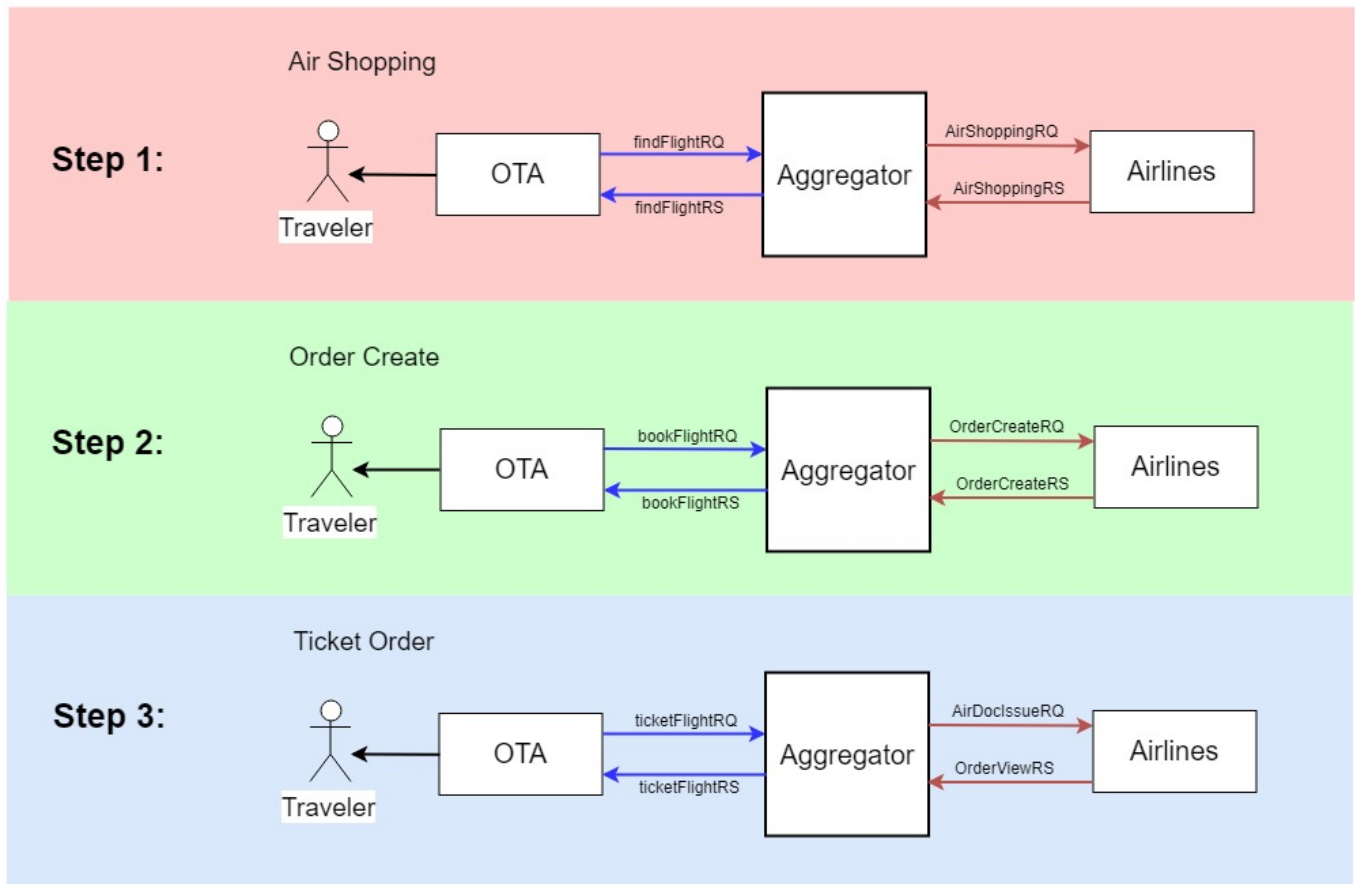
High Level Data flow for ticketing using NGDS API with NDC integration.



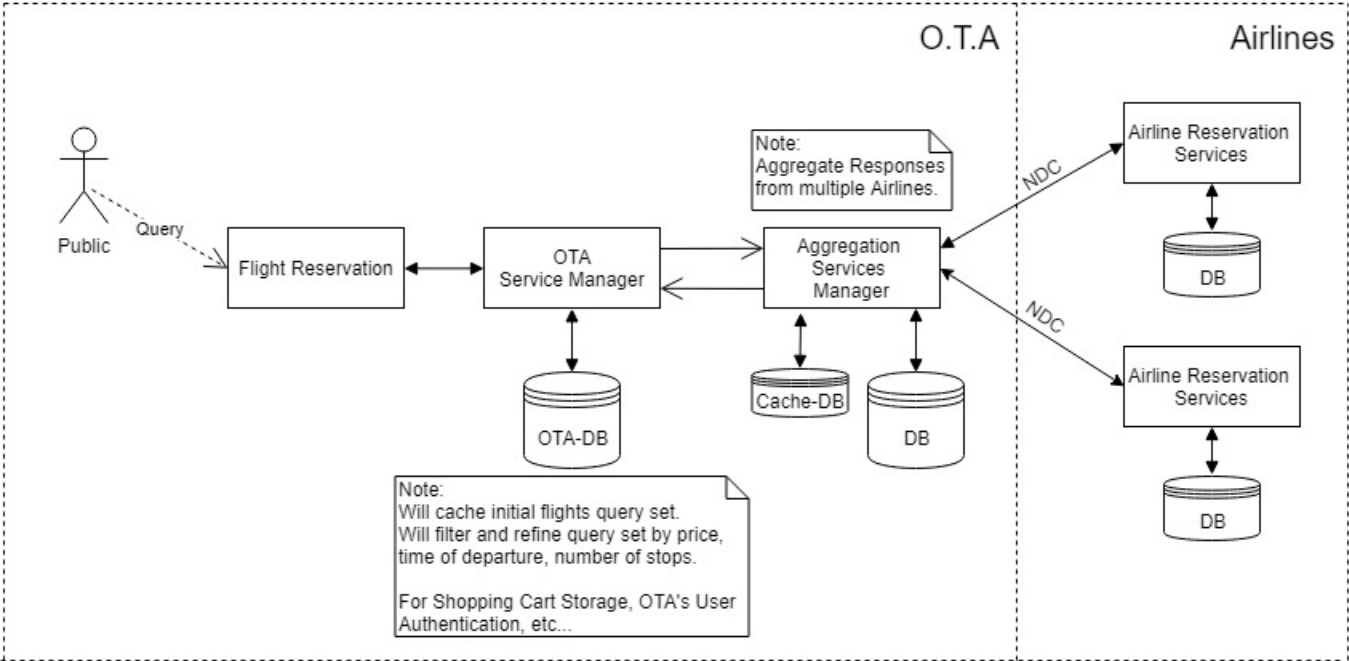
Three Steps process data flow for ticketing using NGDS API with NDC integration.

NGDS API: →

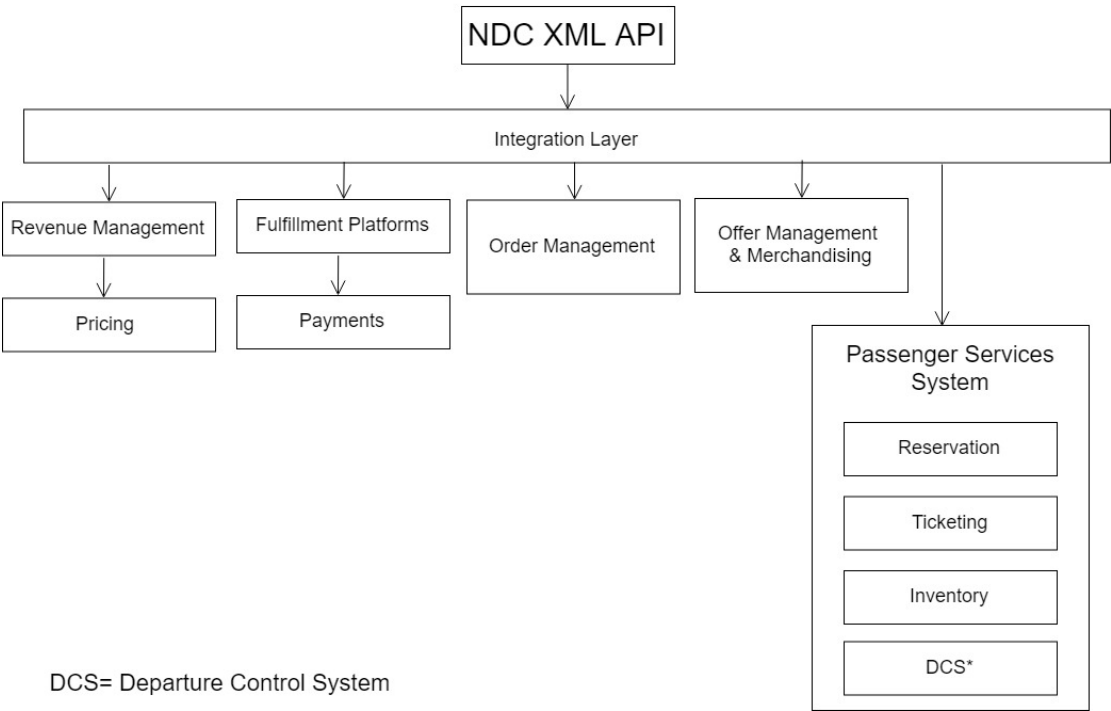
NDC: →



NGDS High Level Diagram



Airline Reservation Services, IATA's recommendation for Multiple systems



Planning Meeting Notes

Sprint 1

NGDS:

FrontEnd: OTA/User, we can find inspiration with Travelocity, expedia, hipmunk... etc

As a public user I WANT TO book a flight via web application SO THAT I can travel ... etc

...

As a public user I would like to select from the list of flight so that I can purchase this flight.

As a user I want to provide origin departure and date SO that I can get a list of available flights details(carrier, etc...)...

As a user I want to

As a OTA: I want to consume carrier flight data so that I can use/present that to satisfy my public users,

As a carrier: I would like to publish my flight information so that other OTAS can consume this information to provide bookings.

BackEnd: building an NDC api.

Origin, destination, date ,time, one way or round trip. On the front end, to match with the database.

Sprint 2

Sprint 2 planning:

-UserStories:

- ShoppingCart(Booking)

- Architecture two servers and UI, high level

(Aggregate)

As a public user I need to query multiple airlines for flight info, and see results in aggregated form

- aggregation database server, receive query from ui and make connection with multiple airline requests.

(aggregate server caching queries)

As a public user I would like to see cash query information so I can efficiently review query results.

As an OTA I need to be able to request flight information from one or more airlines and receive the results in NDC format.

As a user I want to filter my search....

(data base tech for ui query) 8base -> implement it

Sprint 3

Meeting NDC:

The purpose of the project is to investigate methods to implement ndc in the airline industry and to study the transactional behavior which will occur when the system is implemented.

Hyphothesis:

Demonstration of what we are testing, an aggregation based service embedded with OTA will provide an efficient mechanism to manage the different airlines that must be presented to the user when they make a query.

Analysis will have both the efficiency of moving data between OTA and airlines and the cost it would be.

*Research data warehousing techniques that OTA's use or airlines.

*Research CQRS architecture

-Behavior -optimization strategy and -design implementation..

*Identify behavior of reads and writes for each database in the architecture and then identify strategy to take to address this r/w behavior, and then design an implementation, for instance the db for airlines will be a limited number of writes and exponential number of reads, where the aggregator will have both each person can generate thousand of queries, which it will have cached data that you don't have to redo.

-OTA cached data base is individual request set that don't want to trigger cascade set of queries but reduce the query impact of the architecture.

User stories

Caching efficiency between aggregator services and OTAs's cache... : two user stories one for ota and one for aggregator.

- As a systems architect I want to define the transactional behavior of the different databases so I can identify an optimization strategy that I can use to design and implement my db.
- Design endpoint for each database so that I can make query and access data efficiently.

Sprint 4

Meeting 4:

90 mil transaction per day.. architecture for handling 600-4000 transactions per second.

****ANALYSIS****

Q- most used transaction for NDC.

CQRS***?

TODO: Diagram for this semester of workflow between OTA and Airline, for ticketing a flight. (U.S.)

Part of the analysis of the data, based on the architecture of the product. If we have 1000 booking REQ per minute. ?1000 booking request for every ticket sold.

FOCUS on ARCHITECTURE* STRATEGIES FOR BOOKING AND TICKETING**

*****Caching Strategies for data sets.**

Best practices/architecture: high availability systems

NDC find if there's description for time to live for the data, or how long would it be, and it has to be re requested after the TTL has expired.

Sprint 5

Notes:

Airlines should provide interface that allows OTA aggregate server to acquire NDC transactions. (Luis)

At least three airlines for the OTA to access NDC data. (Luis)

As a system architect I want my airline database to perform well with around 600 transactions per second of reads. (Luis)

As a S.A. we want to use similar airline data for fares over the same time period and market. (Luis)

Sprint 6

TODO:

- Caching service in OTA side.
- Three Airlines Aggregation.
- TESTING!!!! Validating NDC some type of schema validation!!!!.
- Poster.
- Documentation.

Resources

Micro service Presentation:



Useful Resources:

For Express with PostgreSQL:

- <https://www.codementor.io/olawalealadeusi896/building-a-simple-api-with-nodejs-expressjs-and-postgresql-db-masuu56t7>
- <https://scotch.io/tutorials/getting-started-with-node-express-and-postgres-using-sequelize>

For Angular:

- <https://angular.io/tutorial>
- <https://material.angular.io/>

NDC Material:

