



External API process flow document

Version 0.1

Document history

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1. Introduction

This document is intended for representing the external API process flow for search, create itinerary, price check and book.

1.1 Purpose

The purpose and scope of this document is to present clearly the process flow steps for the external API and clearly understand the data flow carried out at different stages like search, itinerary creation, price check and finally booking the flight.

1.2 Audience

This document is intended for Developers, Architects, Program Managers and all the stake holders for clearer understanding of process flow.

2. External API process flow

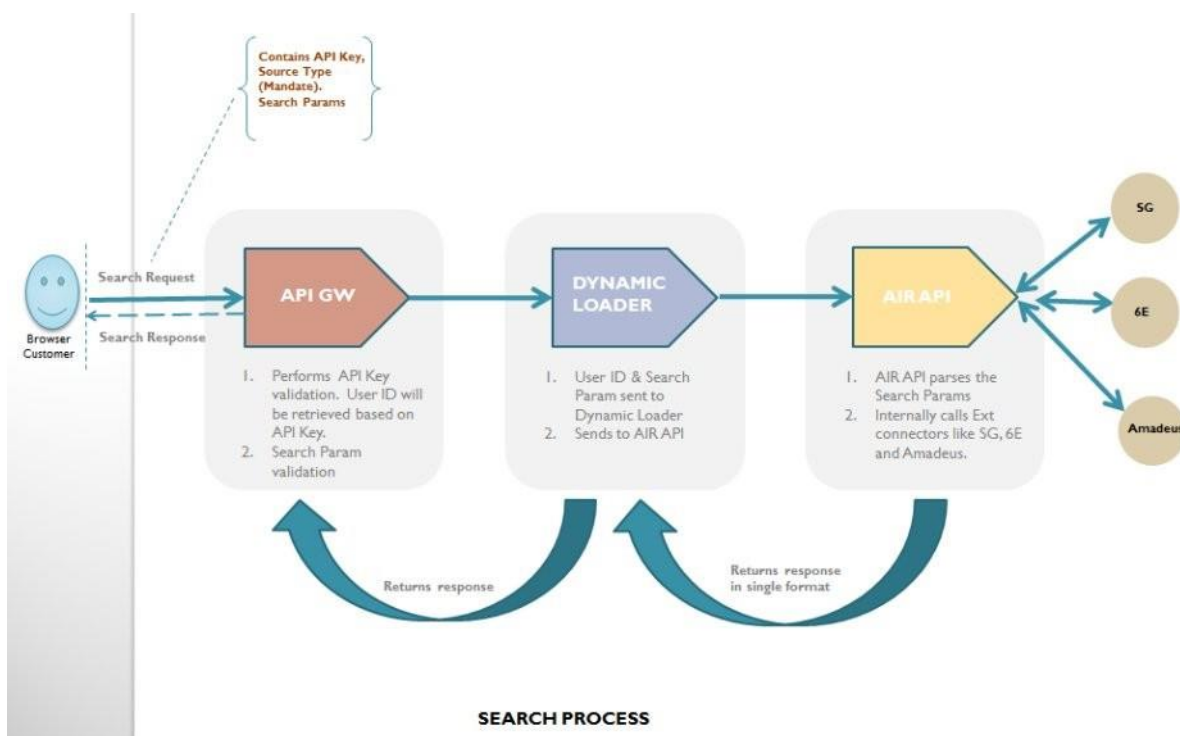
The process flow during each stage of flight booking is represented in the process flow steps as mentioned below:

- Process flow – Search
- Process flow – Create itinerary
- Process flow – Price check
- Process flow – Book

2.1 Process flow - Search

The below diagram represents the process and data flow while searching for the flight details.

Figure 1 Search process flow



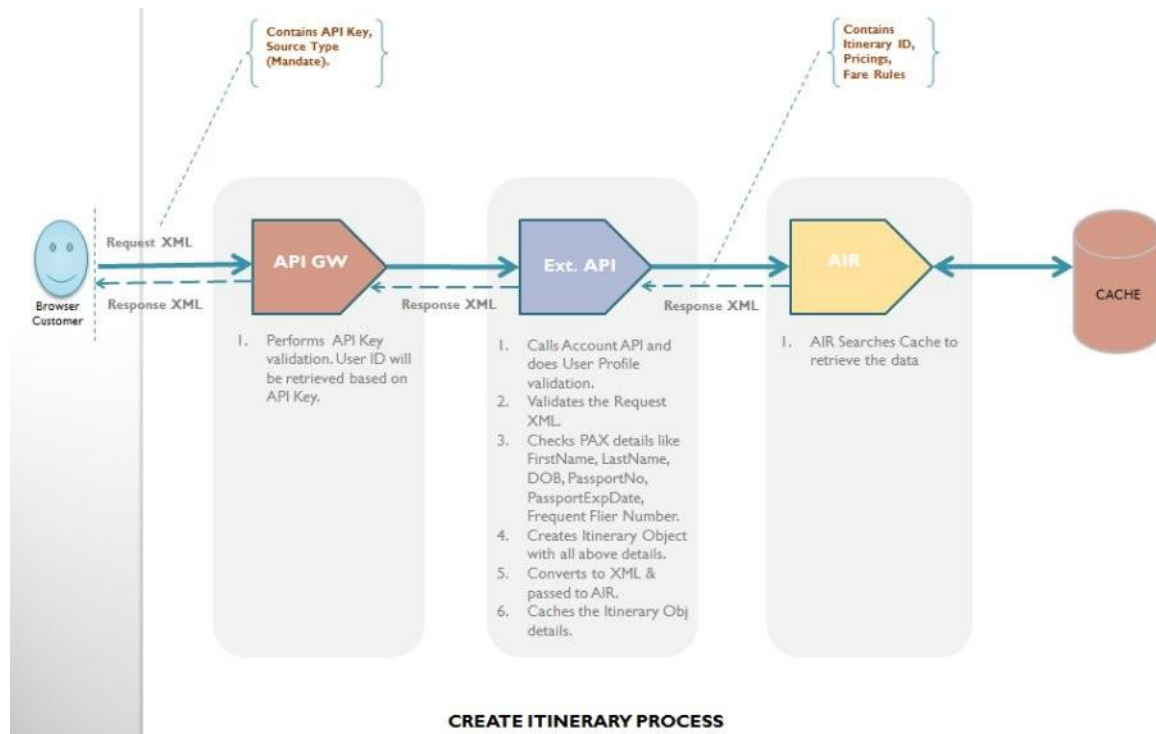
Below are the steps occurred during Search process.

- The browser customer sends the search request to the API GW (API Gateway). The search request contains the API key and source type information. API key is unique for every client. The request also contains the search parameters like from, to, depart date as part of the search URL.
- API GW performs the API key validation for the client and also retrieves the User ID based on API key.
- The Search parameters and the User ID are passed on to the Dynamic Loader and then to the AIR API.
- AIRAPI parses the search parameters and internally calls the external connectors like SG (Spice jet), 6E (Indigo), Amadeus in order to fetch the required flight information.
- Once the flight data is retrieved from the connectors, the response is sent back in a single format to Dynamic Loader which further returns it back to API GW and finally to the browser customer.

2.2 Process flow – Create itinerary

The below diagram represents the process and data flow during create itinerary.

Figure 2 Create itinerary process flow



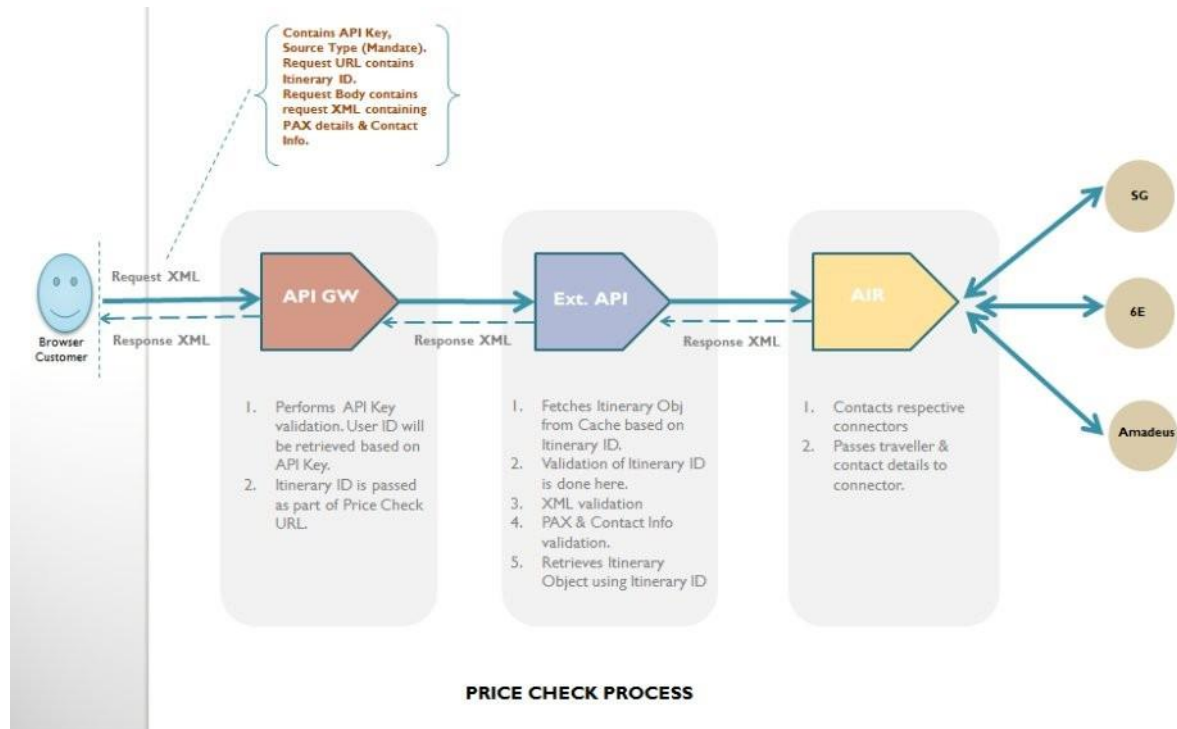
Below are the steps occurred during Create itinerary process.

- The browser customer sends the search request to the API GW (API Gateway). The search request contains the API key and source type information. API key is unique for every client.
- External API makes an internal call to the Account API and User Profile validation is done. The request XML is validated here for the correct data format and XML structure. Checks the PAX info details like the traveler's First Name, Last Name, DOB, Passport Number and Passport Expiry date etc. The external API creates the itinerary object containing all the PAX info details. This itinerary object is converted to XML before being sent to AIR. Lastly, the external API will cache the itinerary object.
- AIR will do the relevant search to retrieve the data from the cache and return the response. The response XML contains the itinerary ID, pricing and fare rule details. The response XML is further sent back to the user.

2.3 Process flow – Price check

The below diagram represents the process and data flow during price check (for latest fares).

Figure 3 Price check process flow



Below are the steps occurred during Price check process.

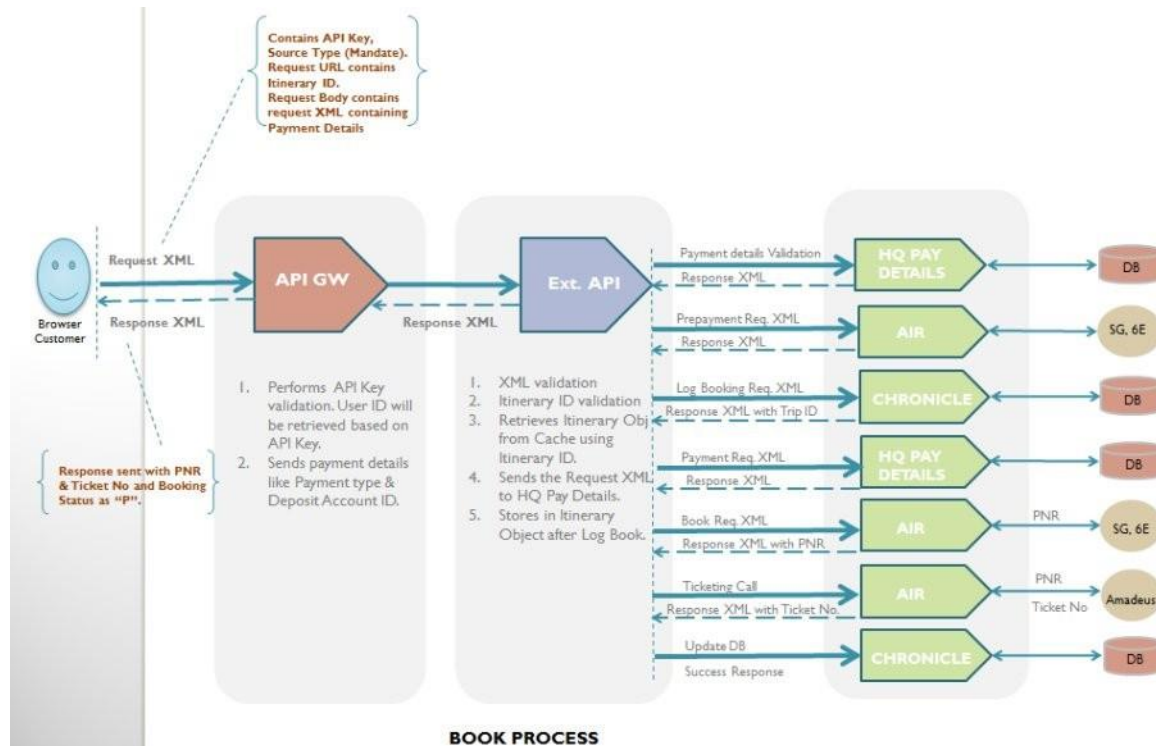
- Price check is done to get the latest fares for the flights. Here, the request XML contains API key and source type as mandatory parameters. Apart from that, the request URL contains the itinerary ID created during Create itinerary process. The request body contains the PAX details like the traveler's First Name, Last Name, DOB, Passport Number, Passport Expiry date, Frequent flier number and contact info like email, address, mobile, landline, state, country etc.
- API GW does the API key validation and the User ID is retrieved. The itinerary ID is passed as part of the price check URL.
- The external API will fetch the itinerary object which was stored in the Cache. The price check request XML and itinerary object is validated here. The request is further sent to AIR.
- AIR contacts the respective connectors to fetch the relevant data. The AIR passes the traveler and contact details to the connectors.
- Once data is retrieved from the connectors, the response XML is returned back through the API GW to the browser customer.

Note: Once Price check is done, book has to be done within 10mins else the itinerary expires and fresh booking has to be done.

2.4 Process flow – Book

The below diagram represents the process and data flow during booking.

Figure 4 Book process flow



Below are the steps occurred during Book process.

- Book flow represents the book process flow steps. The book request XML contains API key and source type as part of the mandatory parameters. The request URL will contain the itinerary ID previously created. The request body contains the request XML which mandatorily contains the payment details (payment_type, deposit_account_id).
- API GW will validate the API key and send the payment details to external API as part of the request XML.
- External API performs the below steps:
 - Sends the request XML to an application **HQ Pay Details** which does the payment details validation. It validates if deposit account matches against the API key. Only if, the deposit account ID belongs to the API key the validation is successful. Thereafter, it checks for the balance in.
 - External API will send the PAX and contact details to AIR which passes the details to the connectors like SG (spice jet), 6E (Indigo) etc. If it is successful, log booking is done in DB through the application called **Chronicle**.
 - After log booking, payment request XML is sent to **HQ Pay Details** application. Here the deposit account ID is sent to **HQ Pay Details**.