

API Documentation

API Gateway Service (Port: 8765) - Public Endpoints

Method	Endpoint	Description
POST	/api/v1.0/auth/signin	User login/authentication
POST	/api/v1.0/auth/signup	User registration
POST	/api/v1.0/auth/signout	User logout
GET	/health	Health check

Flight Service - Public Endpoints

Method	Endpoint	Description
GET	/api/v1.0/flight/admin/flights/health	Health check
POST	/api/v1.0/flight/admin/search	Search flights (origin, destination, date)
GET	/api/v1.0/flight/admin/internal/schedules/{id}	Get schedule by ID (internal service-to-service)
POST	/api/v1.0/flight/admin/internal/schedules/{id}/lock-seats	Lock seats (internal service-to-service)
POST	/api/v1.0/flight/admin/internal/schedules/{id}/release-seats	Release seats (internal service-to-service)

Flight Service - Admin Protected endpoints

Method	Endpoint	Description
POST	/api/v1.0/flight/admin/flights	Create a new flight
GET	/api/v1.0/flight/admin/flights	Get all flights
GET	/api/v1.0/flight/admin/flights/{flightNumber}	Get flight by flight number
DELETE	/api/v1.0/flight/admin/flights/{id}	Delete a flight
POST	/api/v1.0/flight/admin/inventory	Add flight schedule/inventory

Booking Service - User Protected Endpoints (ROLE_USER or ROLE_ADMIN)

Method	Endpoint	Description
POST	/api/v1.0/flight/booking/{scheduleId}	Create a new booking
GET	/api/v1.0/flight/booking/{pnrr}	Get booking by PNR
GET	/api/v1.0/flight/bookings/email/{email}	Get all bookings by email
DELETE	/api/v1.0/flight/booking/cancel/{pnrr}	Cancel a booking
GET	/api/v1.0/flight/ticket/{pnrr}	Get ticket by PNR

Docker screenshots

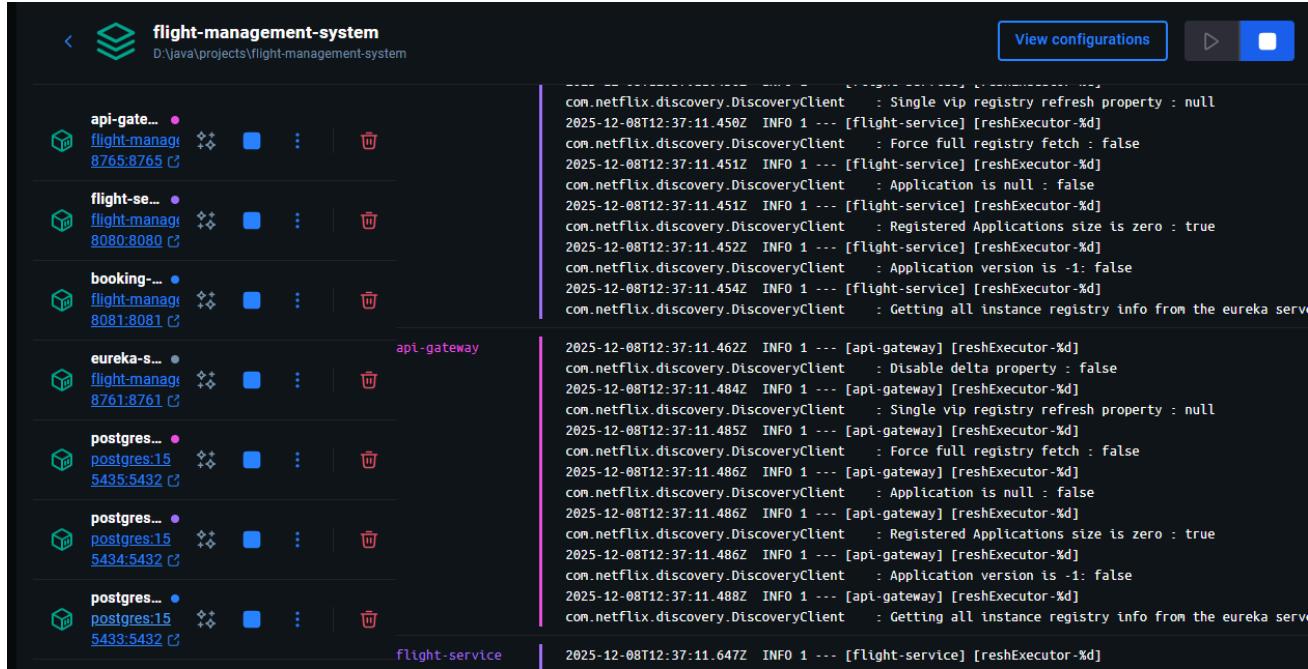
Cmd : docker compose up

```

api-gateway      | 2025-12-08T12:36:42.853Z INFO 1 --- [api-gateway] [           main] com.netflix.discovery.DiscoveryClient : Discovery Client initialized at timestamp 1765197402847 with initial instances count: 0
flight-service   | 2025-12-08T12:36:42.842Z INFO 1 --- [flight-service] [           main] com.netflix.discovery.DiscoveryClient : Discovery Client initialized at timestamp 1765197402838 with initial instances count: 0
booking-service | 2025-12-08T12:36:42.950Z INFO 1 --- [booking-service] [           main] o.s.boot.tomcat.TomcatWebServer : Tomcat started on port 8081 (http) with context path '/'
booking-service | 2025-12-08T12:36:42.959Z INFO 1 --- [booking-service] [           main] .s.c.n.e.s.EurekaAutoServiceRegistration : Updating port to 8081
booking-service | 2025-12-08T12:36:43.061Z INFO 1 --- [booking-service] [           main] c.s.b.BookingServiceApplication : Started BookingServiceApplication in 39.945 seconds (process running for 46.17)
flight-service   | 2025-12-08T12:36:43.371Z WARN 1 --- [flight-service] [           main] igureation$LoadBalancerCaffeineWarnLogger : Spring Cloud LoadBalancer is currently working with the default cache. While this cache implementation is useful for development and tests, it's recommended to use Caffeine cache in production. You can switch to using Caffeine cache, by adding it and org.springframework.cache.caffeine.CaffeineCacheManager to the classpath.
flight-service   | 2025-12-08T12:36:43.491Z INFO 1 --- [flight-service] [           main] o.s.c.n.e.s.EurekaServiceRegistry : Registering application FLIGHT-SERVICE with eureka with status UP
flight-service   | 2025-12-08T12:36:43.494Z INFO 1 --- [flight-service] [           main] com.netflix.discovery.DiscoveryClient : Saw local status change event StatusChangeEvent [timestamp=1765197403494, current=UP, previous=STARTING]
flight-service   | 2025-12-08T12:36:43.504Z INFO 1 --- [flight-service] [foReplicator-%d] com.netflix.discovery.DiscoveryClient : DiscoveryClient_FLIGHT-SERVICE/8fca459155e9:flight-service:8080: registering service...
flight-service   | 2025-12-08T12:36:43.605Z INFO 1 --- [flight-service] [           main] o.s.boot.tomcat.TomcatWebServer : Tomcat started on port 8080 (http) with context path '/'
flight-service   | 2025-12-08T12:36:43.611Z INFO 1 --- [flight-service] [           main] .s.c.n.e.s.EurekaAutoServiceRegistration : Updating port to 8080
flight-service   | 2025-12-08T12:36:43.651Z INFO 1 --- [flight-service] [           main] c.s.f.FlightServiceApplication : Started FlightServiceApplication in 40.155 seconds (process running for 46.562)
eureka-server    | 2025-12-08T12:36:43.714Z INFO 1 --- [eureka-server] [nio-8761-exec-4] c.n.e.registry.AbstractInstanceRegistry : Registered instance BOOKING-SERVICE/1a767ff023eb:booking-service:8081 with status UP (replication=false)
eureka-server    | 2025-12-08T12:36:43.714Z INFO 1 --- [eureka-server] [nio-8761-exec-6] c.n.e.registry.AbstractInstan

```

Docker desktop



docker logs -f api-gateway

```
D:\java\projects\flight-management-system>docker logs -f api-gateway
[{"id": "8761", "label": "api-gateway", "status": "running", "port": 8761, "ip": "172.18.0.3"}, {"id": "8080", "label": "flight-management-system", "status": "running", "port": 8080, "ip": "172.18.0.3"}, {"id": "8081", "label": "booking-service", "status": "running", "port": 8081, "ip": "172.18.0.3"}, {"id": "8761", "label": "eureka-service", "status": "running", "port": 8761, "ip": "172.18.0.3"}, {"id": "5435", "label": "postgres", "status": "running", "port": 5435, "ip": "172.18.0.3"}, {"id": "5434", "label": "postgres", "status": "running", "port": 5434, "ip": "172.18.0.3"}, {"id": "5433", "label": "postgres", "status": "running", "port": 5433, "ip": "172.18.0.3"}, {"id": "8082", "label": "flight-service", "status": "running", "port": 8082, "ip": "172.18.0.3"}]
:: Spring Boot :: (v3.4.1)
2025-12-08T10:31:13.217Z INFO 1 --- [api-gateway] [main] c.s.apigateway.ApiGatewayApplication : Starting ApiGatewayApplication v0.0.1-SNAPSHOT using Java 21.0.9 with PID 1 (/app/app.jar started by root in /app)
2025-12-08T10:31:13.235Z INFO 1 --- [api-gateway] [main] c.s.apigateway.ApiGatewayApplication : No active profile set, falling back to 1 default profile: "default"
2025-12-08T10:31:24.433Z INFO 1 --- [api-gateway] [main] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data JPA repositories in DEFAULT mode.
2025-12-08T10:31:26.041Z INFO 1 --- [api-gateway] [main] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repository scanning in 1462 ms. Found 2 JPA repository interfaces.
2025-12-08T10:31:33.760Z INFO 1 --- [api-gateway] [main] o.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing PersistenceUnitInfo [name: default]
2025-12-08T10:31:34.639Z INFO 1 --- [api-gateway] [main] org.hibernate.Version : HHH000412: Hibernate ORM core version 6.6.4.Final
2025-12-08T10:31:35.134Z INFO 1 --- [api-gateway] [main] o.h.c.internal.RegionFactoryInitiator : HHH000026: Second-level cache disabled
2025-12-08T10:31:39.481Z INFO 1 --- [api-gateway] [main] o.s.o.j.p.SpringPersistenceUnitInfo : No LoadTimeWeaver setup; ignoring JPA class transformer.
```

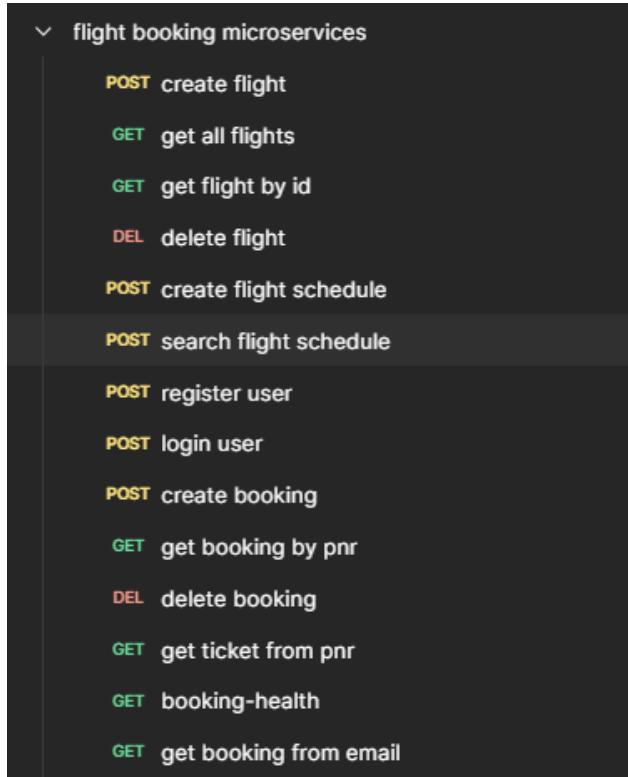
docker logs -f flight-service

```
D:\java\projects\flight-management-system>docker logs -f flight-service
[{"id": "8082", "label": "flight-service", "status": "running", "port": 8082, "ip": "172.18.0.3"}]
:: Spring Boot :: (v4.0.0)
2025-12-08T10:31:10.529Z INFO 1 --- [flight-service] [main] c.s.f.FlightServiceApplication : Starting FlightServiceApplication v0.0.1-SNAPSHOT using Java 21.0.9 with PID 1 (/app/app.jar started by root in /app)
2025-12-08T10:31:10.618Z INFO 1 --- [flight-service] [main] c.s.f.FlightServiceApplication : No active profile set, falling back to 1 default profile: "default"
2025-12-08T10:31:21.781Z INFO 1 --- [flight-service] [main] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data JPA repositories in DEFAULT mode.
2025-12-08T10:31:22.972Z INFO 1 --- [flight-service] [main] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repository scanning in 1143 ms. Found 2 JPA repository interfaces.
2025-12-08T10:31:29.290Z INFO 1 --- [flight-service] [main] o.s.boot.tomcat.TomcatWebServer : Tomcat initialized with port 8080 (http)
2025-12-08T10:31:29.362Z INFO 1 --- [flight-service] [main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-12-08T10:31:29.363Z INFO 1 --- [flight-service] [main] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/11.0.14]
2025-12-08T10:31:29.580Z INFO 1 --- [flight-service] [main] h.w.c.s.WebApplicationContextInitializer : Root WebApplicationContext: initialization completed in 10 ms.
```

```
docker logs -f booking-service
```

Postman Screenshots

Complete api endpoints in postman, json file included in github repo



User Register - public route

This screenshot shows a Postman request for the 'User Register - public route'. The request is a POST to `http://localhost:8765/api/v1.0/auth/signup`. The 'Body' tab is selected, showing the following JSON payload:

```
1 {  
2   "username": "user",  
3   "email": "user@gmail.com",  
4   "password": "password1234",  
5   "role": ["user"]  
6 }
```

The response status is 200 OK, with a response time of 923 ms and a body size of 403 B. The response body is:

```
1 {  
2   "message": "User registered successfully!"  
3 }
```

User Login - public route

The screenshot shows a POST request to `http://localhost:8765/api/v1.0/auth/signin`. The request body is raw JSON:

```
1 {  
2   "username": "user",  
3   "password": "password1234"  
4 }
```

The response status is 200 OK, with a response time of 359 ms, a response size of 620 B, and a token included in the response body:

```
1 {  
2   "token": "eyJhbGciOiJIUzI1NiJ9.  
3     eyJzdWIiOiJ1c2Vyiwi cm9sZX MiOl siUk9MRV9VU0VSIL0sIm lhdCI6MTc2NTE3NDcxOSwiZXhwIjoxNzY1MjYxMTE5fQ.  
4     IIhtZ37usliVQTGS7qHYNfDEjdIfFtceIXSMVBpHw1Y",  
5   "id": 6,  
6   "username": "user",  
7   "email": "user@gmail.com",  
8   "roles": [  
9     "ROLE_USER"  
10    ],  
11   "type": "Bearer"  
12 }
```

Admin Signup - public route

The screenshot shows a POST request to `http://localhost:8765/api/v1.0/auth/signup`. The request body is raw JSON:

```
1 {  
2   "username": "admin12",  
3   "email": "admin12@gmail.com",  
4   "password": "password1234",  
5   "role": ["admin"]  
6 }
```

The response status is 200 OK, with a response time of 264 ms, a response size of 403 B, and a message in the response body:

```
1 {  
2   "message": "User registered successfully!"  
3 }
```

Admin Login - public route

The screenshot shows the Postman interface for a POST request to `http://localhost:8765/api/v1.0/auth/signin`. The request body contains the following JSON:

```
1 {
2   "username": "admin12",
3   "password": "password1234"
4 }
```

The response status is **200 OK** with a response time of 217 ms, a size of 632 B, and a token header. The response body is a JSON object containing a token, id, username, email, roles (ROLE_ADMIN), and type (Bearer).

```
1 {
2   "token": "eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJhZG1pbjEyIiwicm9sZXMiOlzsiuk9MRV9BRE1JTidLCJpYXQiOjE3NjUxNzQ3ODMsImV4cCI6MTc2NTI2MTE4M30.2xjssershJ8mQCuqM4DkwPEBczToLl0IvVZoj8fodNU",
3   "id": 7,
4   "username": "admin12",
5   "email": "admin12@gmail.com",
6   "roles": [
7     "ROLE_ADMIN"
8   ],
9   "type": "Bearer"
10 }
```

Admin only protected routes

The screenshot shows the Postman interface for a POST request to `http://localhost:8765/api/v1.0/flight/admin/flights`. The request uses a **Bearer Token** authorization type, with the token value set to `CuqM4DkwPEBczToLIOlvVZoj8fodNU`.

The response status is **201 Created** with a response time of 1.87 s, a size of 540 B, and a message indicating the flight was created successfully with flight number AI997.

```
1 {
2   "message": "Flight created successfully with flight number: AI997",
3   "status": "CREATED",
4   "id": "f3fef3db-9c6b-4274-8953-6c8d78eea14a"
5 }
```

Negative test - without Bearer token - 401 unauthorized

The screenshot shows a Postman request to `http://localhost:8765/api/v1.0/flight/admin/flights`. The request method is `POST`. The body contains the following JSON:

```
1 "flightNumber": "AI9998",
2 "airline": "AIR_INDIA",
3 "originAirport": "HYD",
4 "destinationAirport": "DEL",
5 "seatCapacity": 3
```

The response status is **401 Unauthorized**, with a duration of 39 ms and a size of 389 B. The response body is:

```
{ "path": "/api/v1.0/flight/admin/flights", "error": "Unauthorized", "message": "Not Authenticated", "status": 401 }
```

Get all flights - with admin bearer token

The screenshot shows a Postman request to `http://localhost:8765/api/v1.0/flight/admin/flights`. The request method is `GET`. The **Authorization** tab is selected, showing **Token** and a token value: `4hEZ10WRuuT9RXkFrTcBLTWQ9KUsc`.

The response status is **200 OK**, with a duration of 121 ms and a size of 2.25 KB. The response body is:

```
[ { "id": "ee72d147-3585-42c1-85dd-e2ca43db7c89", "flightNumber": "AI100", "airline": "AIR_INDIA", "originAirport": "HYD", "destinationAirport": "DEL", "seatCapacity": 180 }, { "id": "a602ec31-964a-4ae9-ba80-72fb0ecd84b2", "flightNumber": "AI104", "airline": "AIR_INDIA", "originAirport": "HYD", "destinationAirport": "DEL", "seatCapacity": 180 } ]
```

Negative test

The screenshot shows the Postman application interface. At the top, the URL is `http://localhost:8765/api/v1.0/flight/admin/flights`. The method is set to `GET`. On the right, there are buttons for `Save`, `Share`, and a copy icon. Below the URL, tabs include `Docs`, `Params`, `Authorization` (which is selected and highlighted in green), `Headers (7)`, `Body`, `Scripts`, and `Settings`. The `Authorization` tab has a dropdown for `Auth Type` set to `Be...`, and a `Token` input field containing the word `Token`. In the main body area, there are tabs for `Body`, `Cookies`, and `Headers (9)`. The `Test Results` tab is active, showing a red box with the status code `401 Unauthorized`, a response time of `19 ms`, and a size of `389 B`. There are also icons for saving the response and more options. Below the results, there is a JSON preview section with the following content:

```
1 {  
2   "path": "/api/v1.0/flight/admin/flights",  
3   "error": "Unauthorized",  
4   "message": "Not Authenticated",  
5   "status": 401  
6 }
```

Get Flight By Id

The screenshot shows the Postman interface for testing an API endpoint. The URL is `http://localhost:8765/api/v1.0/flight/admin/flights/AI999`. The response status is `200 OK`, with a response time of `65 ms` and a size of `631 B`. The response body is a JSON object containing flight details and a success message.

```
[{"id": "87f55ab6-923c-4ed1-a032-506a59ecd628", "flightNumber": "AI999", "airline": "AIR_INDIA", "originAirport": "HYD", "destinationAirport": "DEL", "seatCapacity": 3}, {"message": "Flight retrieved successfully", "status": "FOUND"}]
```

Delete Flight

HTTP flight booking microservices / **delete flight**

DELETE http://localhost:8765/api/v1.0/flight/admin/flights/f3fef3db-9c6b-4274-8953-6c8d78eea14a **Send**

Docs Params **Authorization** Headers (8) Body Scripts Settings Cookies

Auth Type
Bearer Token

The authorization header will be automatically generated when you send the request. Learn more about [Bearer Token](#) authorization.

Token CuqM4DkwPEBczToLIOlvVZoj8fodNU

Body Cookies Headers (13) Test Results 200 OK 187 ms 475 B Save Response

{ } JSON Preview Visualize

```
1 {  
2   "message": "Flight deleted successfully",  
3   "status": "DELETED",  
4   "id": null  
5 }
```

Create Flight Schedule

HTTP flight booking microservices / **create flight schedule**

POST http://localhost:8080/api/v1.0/flight/admin/inventory **Send**

Docs Params **Authorization** Headers (10) Body Scripts Settings Cookies

Auth Type
Bearer Token

The authorization header will be automatically generated when you send the request. Learn more about [Bearer Token](#) authorization.

Token CuqM4DkwPEBczToLIOlvVZoj8fodNU

Body Cookies Headers (11) Test Results 201 Created 108 ms 470 B Save Response

{ } JSON Preview Visualize

```
1 {  
2   "message": "Flight schedule created successfully for flight: AI999",  
3   "status": "CREATED",  
4   "id": "0faad41e-613f-4725-b18d-2054fda7ff31"  
5 }
```

Search Flight Schedule - public route (Anyone can access this end point)

HTTP flight booking microservices / search flight schedule

POST http://localhost:8080/api/v1.0/flight/admin/search

Body **raw**

```
1 {  
2   "originAirport": "HYD",  
3   "destinationAirport": "DEL",  
4   "flightDate": "2025-12-25"  
5 }
```

200 OK • 457 ms • 3.04 KB • Save Response

Body Cookies Headers (11) Test Results

{ } JSON ▾ Preview Visualize

```
1 [  
2   {  
3     "scheduleId": "afb0789f-acde-44d2-9bd3-ae561bc7a879",  
4     "flightId": "ee72d147-3585-42c1-85dd-e2ca43db7c89",  
5     "flightNumber": "AI100",  
6     "airline": "AIR_INDIA",  
7     "originAirport": "HYD",  
8     "destinationAirport": "DEL",  
9     "flightDate": "2025-12-25",  
10    "departureTime": "10:00:00",  
11    "arrivalTime": "12:30:00",  
12    "fare": 4500.00,  
13    "totalSeats": 180.
```

Create Booking - Admin & User protected

HTTP flight booking microservices / create booking

POST http://localhost:8765/api/v1.0/flight/booking/0faad41e-613f-4725-b18d-2054fda7ff31

Authorization **Bearer Token**

The authorization header will be automatically generated when you send the request. Learn more about

Body Raw ▾ Preview Visualize

201 Created • 5.54 s • 415 B • Save Response

```
1 5KKDMV
```

Get Booking by PNR - Admin & User protected

The screenshot shows the Postman interface for a GET request to `http://localhost:8081/api/v1.0/flight/booking/5KKDMV`. The response status is 200 OK with a response time of 135 ms and a body size of 671 B. The response body is a JSON object representing a booking:

```
1 {  
2   "bookingId": "2c299832-5675-4eb1-81a4-af2427ba3ab5",  
3   "pnr": "5KKDMV",  
4   "contactEmail": "user@gmail.com",  
5   "scheduleIds": [  
6     "0faad41e-613f-4725-b18d-2054fda7ff31"  
7   ],  
8   "passengers": [  
9     {  
10        "fullName": "John Doe",  
11        "gender": "MALE",  
12        "age": 30,  
13        "seatNumber": "1u",  
14        "mealOption": "VEG"  
15     }  
16   ],  
}
```

Delete Booking - Admin & User protected

The screenshot shows the Postman interface for a DELETE request to `http://localhost:8765/api/v1.0/flight/booking/cancel/5KKDMV`. The response status is 200 OK with a response time of 317 ms and a body size of 482 B. The response body is a JSON object indicating success:

```
1 {  
2   "message": "Booking and tickets cancelled successfully",  
3   "status": "CANCELLED"  
4 }
```

Get Ticket from PNR - Admin & User protected

HTTP flight booking microservices / get ticket from pnr

GET http://localhost:8765/api/v1.0/flight/ticket/K6802H Send

Authorization • Headers (8) Body Scripts Settings Cookies

Auth Type Bearer Token Token CuqM4DkwPEBczToLIOlvVZoj8fodNU

The authorization header will be

Body Cookies Headers (13) Test Results 200 OK 59 ms 746 B Save Response

{ } JSON Preview Visualize

```
1 {  
2   "ticketId": "ad3657a8-e54e-4b42-b089-d84aff72ff74",  
3   "pnr": "K6802H",  
4   "scheduleId": "0faad41e-613f-4725-b18d-2054fda7ff31",  
5   "passengers": [  
6     {  
7       "fullName": "John Doe",  
8       "gender": "MALE",  
9       "age": 30,  
10      "seatNumber": "1u",  
11      "mealOption": "VEG"  
12    },  
13  ],  
14  "createdAt": "2025-12-08T12:08:03.521851",  
15  "updatedAt": "2025-12-08T12:08:03.521851".
```

Get Booking from Email - Admin & User protected

HTTP flight booking microservices / get booking from email

GET http://localhost:8081/api/v1.0/flight/bookings/email/user@gmail.com Send

Authorization • Headers (8) Body Scripts Settings Cookies

Auth Type Bearer Token Token CuqM4DkwPEBczToLIOlvVZoj8fodNU

Body Cookies Headers (12) Test Results 200 OK 30 ms 1.03 KB Save Response

{ } JSON Preview Visualize

```
1 [  
2   {  
3     "bookingId": "2c299832-5675-4eb1-81a4-af2427ba3ab5",  
4     "pnr": "5KKDMV",  
5     "contactEmail": "user@gmail.com",  
6     "scheduleIds": [  
7       "0faad41e-613f-4725-b18d-2054fda7ff31"  
8     ],  
9     "passengers": [  
10       {  
11         "fullName": "John Doe",  
12         "gender": "MALE",  
13         "age": 30,  
14         "seatNumber": "1u",  
15         "mealOption": "VEG"
```

Jacoco report - api-gateway



api-gateway

api-gateway

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cqty	Missed	Lines	Missed	Methods	Missed	Classes
com.saitaja.apigateway.security.jwt		52%		30%	15	32	48	100	5	19	0	4
com.saitaja.apigateway.security.services		67%		0%	10	21	12	38	7	18	0	2
com.saitaja.apigateway.dto.response		63%		n/a	7	16	14	32	7	16	0	2
com.saitaja.apigateway.service		85%		80%	5	14	3	43	3	9	0	1
com.saitaja.apigateway.config		38%		50%	2	4	6	10	0	2	0	1
com.saitaja.apigateway.security		93%		0%	4	13	5	36	1	10	0	1
com.saitaja.apigateway.model		84%		n/a	1	3	3	12	1	3	1	3
com.saitaja.apigateway		37%		n/a	1	2	2	3	1	2	0	1
com.saitaja.apigateway.controller		100%		100%	0	7	0	11	0	6	0	1
com.saitaja.apigateway.dto.request		100%		n/a	0	14	0	20	0	14	0	2
Total	341 of 1,223	72%	34 of 54	37%	45	126	93	305	25	99	1	18

Sonar Qube reports before:

The screenshot shows the SonarQube Cloud interface for the project 'dockermicro_assignment'. The main summary page indicates a 'Passed' status. Key metrics shown include 4 open security issues, 4 open reliability issues, and 83 open maintainability issues. There are also sections for Accepted issues (0), Coverage (with a note about setting up coverage analysis), and Duplications (14.5%).

after:

The screenshot shows the SonarQube Cloud interface for the project 'dockermicro_assignment'. The main branch summary page indicates a 'Passed' status. Key metrics shown include 4 open security issues, 0 open reliability issues, and 8 open maintainability issues. Coverage and duplications remain at 14.8% and 14.5% respectively, compared to the previous screenshot.