

amadeus web services documentation

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Amadeus Web Services Documentation: Your Complete Guide to Travel Tech Integration

In the fast moving world of travel technology, developers need reliable, well structured APIs to power flight booking engines, hotel reservation systems, and travel commerce platforms. **Amadeus**, a global leader in travel content and technology, offers a comprehensive suite of web services that enable real time access to airline schedules, availability, pricing, and more. This guide walks you through the **Amadeus web services documentation**, helping you understand how to navigate the portal, authenticate, construct requests, interpret responses, and implement best practices for a robust, scalable integration.

What Is Amadeus and Why It Matters to Developers

Amadeus is a multinational travel technology company that supplies data, software, and services to airlines, hotels, travel agencies, and other industry stakeholders. With a legacy dating back to the 1980s, Amadeus has evolved into a modern API first platform, offering over 200 RESTful web services that cover flight schedules, booking, ancillary services, and travel commerce solutions.

For developers, Amadeus is more than a data source; it's a gateway to:

- Real time flight availability and pricing for millions of routes.
- Hotel and car hire inventory with dynamic pricing.
- Ancillary services such as seat selection, baggage, and travel insurance.
- Comprehensive travel commerce tools for e commerce, OTA, and travel agency workflows.

By leveraging the Amadeus API ecosystem, you can build innovative travel experiences that compete with established travel platforms while maintaining a high degree of flexibility.

Getting Started With the Amadeus Web Services Documentation

The Amadeus documentation portal is the central hub for all API references, SDKs, tutorials, and best practice guides. Below is a step by step walkthrough of how to access the documentation and set up a developer account.

1. Visit the Amadeus for Developers Portal: Navigate to developers.amadeus.com and click "Sign Up." The portal is free for developers to explore, with paid tiers available for production workloads.
2. Create a Developer Account: Provide basic contact details and verify your email. Once registered, you'll receive a confirmation email and a welcome message with links to the API catalog.
3. Explore the API Catalog: Browse categories such as "Flight, Hotel, Car, Travel Commerce, and Ancillary." Each API entry contains a brief description, usage examples, and a link to detailed documentation.
4. Generate API Credentials: In the dashboard, select the "API Keys" tab. Create a new key pair (Client ID and Client Secret) for your project. These credentials are required for OAuth authentication.
5. Read the Quickstart Guide: The portal includes a "Quickstart" section that walks you through obtaining an access token and making a sample request.

Authentication: OAuth 2.0 Flow Explained

All Amadeus APIs use OAuth 2.0 for secure, token based authentication. The typical flow involves obtaining an access token with your client credentials and including that token in subsequent API requests.

Step 1: Request an Access Token

Make a POST request to the token endpoint:

POST <https://test.api.amadeus.com/v1/security/oauth2/token>

Content-Type: application/x-www-form-urlencoded

grant_type=client_credentials&client_id=YOUR_CLIENT_ID&client_secret=YOUR_CLIENT_SECRET

The response will contain an access_token and an expires_in value. Store the token securely and refresh it before it expires.

Step 2: Use the Token in API Calls

Include the token in the Authorization header of every request:

GET <https://test.api.amadeus.com/v2/reference-data/airports?cityCode=NYC>

Authorization: Bearer YOUR_ACCESS_TOKEN

When the token expires, repeat the OAuth flow to obtain a new one.

Key API Endpoints and Their Use Cases

Below are some of the most frequently used Amadeus web services. For each endpoint, we provide a brief description, typical parameters, and a sample request/response.

Flight Offers Search

Retrieve flight availability and pricing for a given route and travel dates.

- Endpoint: `/v2/shopping/flight-offers`
- Parameters: `originLocationCode`, `destinationLocationCode`, `departureDate`, `adults`, `children`, `travelClass`, etc.
- Response: A list of flight offers, each containing segments, pricing breakdown, and availability.

Sample Request:

GET <https://test.api.amadeus.com/v2/shopping/flight-offers?>

`originLocationCode=NYC&destinationLocationCode=LON&departureDate=2025-10-01&adults=1`

Authorization: Bearer YOUR_ACCESS_TOKEN

Sample Response (excerpt):

```
{
  "meta": {"totalResults": 3},
  "data": [
    {
      "id": "1",
      "type": "flight-offer",
```

```

    "price": {"total": "EUR 520.00", "currency": "EUR"},
    "itineraries": [...]
  },
  ...
]
}

```

Hotel Availability Search

Find hotels in a city that match your date range and guest count.

- Endpoint: /v2/shopping/hotel-offers
- Parameters: cityCode, checkInDate, checkOutDate, roomQuantity, guestQuantity, etc.
- Response: Hotel offers with rates, amenities, and availability.

Ancillary Services

Book ancillary services such as seat selection, baggage, and travel insurance.

- Endpoint: /v2/booking/flight-order
- Parameters: flightOfferId, ancillaryItems, passengerInfo, etc.
- Response: Confirmation of ancillary booking and updated pricing.

Travel Commerce APIs

Integrate end to end booking workflows, including passenger data capture, payment processing, and booking confirmation.

- Endpoint: /v1/booking/flight-order
- Parameters: flightOfferId, passengerData, paymentInfo, etc.
- Response: Booking reference, itinerary, and electronic ticketing information.

Understanding Request and Response Structure

Amadeus follows RESTful conventions, returning JSON payloads that adhere to a consistent schema. Below is a breakdown of common elements you'll encounter.

Meta Object

Provides pagination and result count information.

```

"meta": {
  "totalResults": 42,
  "pageSize": 10,
  "pageNumber": 1
}

```

Data Array

Contains the primary resource objects. Each object typically includes an id, type, and a attributes object.

```

"data": [

```

```
{
  "id": "12345",
  "type": "flight-offer",
  "attributes": { ... }
}
```

Error Handling

When an API call fails, Amadeus returns an errors array with detailed information. Each error object includes a status, code, title, and detail.

```
"errors": [
  {
    "status": "400",
    "code": "INVALID_REQUEST",
    "title": "Bad Request",
    "detail": "Missing required parameter: originLocationCode"
  }
]
```

Sample Code Snippets in Popular Languages

Below are concise code examples that demonstrate how to call the Flight Offers Search endpoint in Python, JavaScript (Node.js), and Java.

Python (Requests Library)

```
import requests

token_url = "https://test.api.amadeus.com/v1/security/oauth2/token"
payload = {
  "grant_type": "client_credentials",
  "client_id": "YOUR_CLIENT_ID",
  "client_secret": "YOUR_CLIENT_SECRET"
}
response = requests.post(token_url, data=payload)
access_token = response.json()["access_token"]

headers = {"Authorization": f"Bearer {access_token}"}
params = {
  "originLocationCode": "NYC",
  "destinationLocationCode": "LON",
  "departureDate": "2025-10-01",
  "adults": 1
}
```

```

}
flight_response = requests.get(
    "https://test.api.amadeus.com/v2/shopping/flight-offers",
    headers=headers,
    params=params
)
print(flight_response.json())

```

JavaScript (Node.js with Axios)

```

const axios = require('axios');

(async () => {
    const tokenRes = await axios.post('https://test.api.amadeus.com/v1/security/oauth2/token', null, {
        params: {
            grant_type: 'client_credentials',
            client_id: 'YOUR_CLIENT_ID',
            client_secret: 'YOUR_CLIENT_SECRET'
        }
    });
    const token = tokenRes.data.access_token;

    const flightRes = await axios.get('https://test.api.amadeus.com/v2/shopping/flight-offers', {
        headers: { Authorization: `Bearer ${token}` },
        params: {
            originLocationCode: 'NYC',
            destinationLocationCode: 'LON',
            departureDate: '2025-10-01',
            adults: 1
        }
    });

    console.log(flightRes.data);
})();

```

Java (Spring RestTemplate)

```

RestTemplate restTemplate = new RestTemplate();
String tokenUrl = "https://test.api.amadeus.com/v1/security/oauth2/token";

MultiValueMap form = new LinkedMultiValueMap();
form.add("grant_type", "client_credentials");
form.add("client_id", "YOUR_CLIENT_ID");

```

```
form.add("client_secret", "YOUR_CLIENT_SECRET");
```

```
HttpHeaders headers = new HttpHeaders();  
headers.setContentType(MediaType.APPLICATION_FORM_URLENCODED);
```

```
HttpEntity request = new HttpEntity(form, headers);
```

```
ResponseEntity tokenResponse = restTemplate.postForEntity(tokenUrl, request, Map.class);  
String accessToken = (String) tokenResponse.getBody().get("access_token");
```

```
HttpHeaders authHeaders = new HttpHeaders();  
authHeaders.setBearerAuth(accessToken);
```

```
UriComponentsBuilder builder = UriComponentsBuilder.fromHttpUrl("https://test.api.amadeus.com/v2/shopping/  
flight-offers")  
    .queryParams("originLocationCode", "NYC")  
    .queryParams("destinationLocationCode", "LON")  
    .queryParams("departureDate", "2025-10-01")  
    .queryParams("adults", "1");
```

```
HttpEntity entity = new HttpEntity(authHeaders);  
ResponseEntity flightResponse = restTemplate.exchange(builder.toUriString(), HttpMethod.GET, entity,  
String.class);
```

```
System.out.println(flightResponse
```

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