#### **API Documentation & Verification Report**

This document serves as confirmation that the API Endpoints have been completed as to the most recent specified requirements and performance expectations.

Testing was done through Swagger UI, a FastAPI in-built extension and a localhost PostgreSQL Database with sample data stored in the ./api/sampledata directory.

# How to conduct testing

- 1) If not already done, begin by initializing the SportsIOT database on pgAdmin
  - a) In ./api/sampledata, initialize the database using init\_db.sql
  - b) Run insert\_data.py to insert sample data
  - c) If needed, modify line 11 in insert\_data.py to accommodate the database port (default port 5432)
- 2) In a separate terminal, go into the ./api directory and start the API

```
python -m uvicorn main:app --reload
```

You should now see Uvicorn running the API on <a href="http://127.0.0.1:8000">http://127.0.0.1:8000</a>.

- 3) To test the API Endpoints using Swagger UI,
  - a) Navigate to <a href="http://127.0.0.1:8000/docs">http://127.0.0.1:8000/docs</a>
  - b) Select the desired endpoint and click "Try it out"

# **GET Endpoints**

# Retrieve all games

Endpoint: GET / games

Description: Retrieves all games from the database.

Authentication: Required ('device\_id' and 'device\_key' in headers).

#### Sample cURL Request

```
curl -X 'GET' \
  'http://127.0.0.1:8000/games' \
  -H 'accept: application/json' \
  -H 'device-id: device_id_1' \
  -H 'device-key: devicekey'
```

## Possible Errors

- 403 Forbidden → Missing or invalid authentication headers.
- 500 Internal Server Error → Database connection issue.

# Testing

Successful Test

Parameters: {device-id: "device\_id\_1", device-key: "devicekey"}

Parameters: {device-id: "admin\_id\_1", admin-key: "adminkey"}

#### Unsuccessful Test

Parameters: {device-id: "device\_id\_1", device-key: "wrongkey"}

```
Server response

Code Details

403
Undocumented Response body

{ "detail": "Unauthorized device" }

Response headers

Content-length: 32
Content-type: application/json date: Fri,31 Jan 2025 99:06:38 GMT server: uvicorn
```

# Get Games with Team

Endpoint: GET /games/{team}

Description: Retrieves all games that involve the specified team.

Authentication: Required ('device\_id' and 'device\_key' in headers).

Path Parameter:

- `team` (string) → The name of the team to search for.

# Sample cURL Request

```
curl -X GET "http://127.0.0.1:8000/games/Washington%20St." \
    -H "device-id: device_id_1" \
    -H "device-key: devicekey"
```

```
Games found for "Team"
    "games": [
        {
             "date": "2025-01-27",
             "time": "18:30:00",
             "away team": "Washington St.",
             "home team": "Miami",
             "score": {"away": 85, "home": 78},
             "winner": "Washington St.",
             "sport": "Basketball (M)"
        }
    ]
}
No games found for "Team"
{
    "games": []
}
```

#### Possible Errors

- 403 Forbidden → Invalid or missing authentication headers.
- 500 Internal Server Error → Database connection issues.

# **Testing**

Successful Tests

Game found for team

Parameters: {team: "Washington St.", device-id: "device\_id\_1", device-key: devicekey}

# No games found for team

Parameters: {team: "Alabama", device-id: "device\_id\_1", device-key: "devicekey"}

```
Server response

Code Details

200 Response body

{ "games": [] }

Response headers

content-length: 12 content-type: application/json date: Fri,31 Jan 2025 09:07:59 GMT server: wvicorn
```

**Unsuccessful Tests** 

NULL team parameter

Parameters: {team: NULL, device-id: "device\_id\_1", device-key: "devicekey"}



#### Failed authentication

Parameters: {team: "Washington St.", device-id: "device\_id\_1", device-key: "wrongkey"}

```
Code Details

403 Error: Forbidden
Response body

{
    "detail": "Unauthorized device"
}

Pownload

Response headers

Content-length: 32 content-type: application/json date: Fri,31 Jan 2025 09:08:59 GNT server: uvicorn
```

# Retrieve games by sport

Endpoint: GET /games/sport/{sport}

Description: Retrieves games for a specific sport.

Authentication: Required ('device\_id' and 'device\_key' in headers).

Path Parameter:

- `sport` (string) → The name of the sport to search for.

#### Sample cURL Request

```
curl -X GET "http://127.0.0.1:8000/games/sport/Basketball%20(M)" \
    -H "device-id: device_id_1" \
    -H "device-key: devicekey"
```

```
Games found for "Sport"
    "games": [
             "date": "2025-01-27",
             "time": "18:30:00",
             "away team": "Washington St.",
             "home team": "Miami",
             "score": {"away": 85, "home": 78},
             "winner": "Washington St.",
             "sport": "Basketball (M)"
        }
    ]
}
No games found for "Sport"
{
    "games": []
}
```

#### Possible Errors

- 403 Forbidden → Invalid or missing authentication headers.
- 500 Internal Server Error → Database connection issues.

# **Testing**

Successful Tests

Game found for sport

Parameters: {sport: "Volleyball (W)", device-id: "device\_id\_1", device-key: "devicekey"}

# No game found for sport

Parameters: {sport: "Volleyball (M)", device-id: "device\_id\_1", device-key: "devicekey"}



#### Unsuccessful Tests

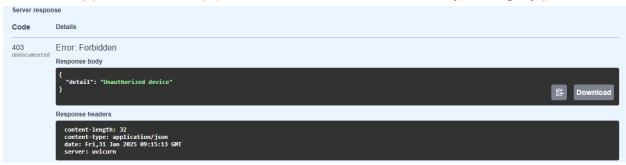
# NULL sport parameter

Parameters: {sport: NULL, device-id: "device\_id\_1", device-key: "devicekey"}



#### Failed authentication

Parameters: {sport: "Basketball (M)", device-id: "device\_id\_1", device-key: "wrongkey"}



# Retrieve games by date

```
Endpoint: GET /games/date/{date}
```

Description: Retrieves games occurring on a specific date.

Authentication Required: Yes (device\_id and device\_key in headers).

Path Parameter:

- `date` (string) → The date to search for.

#### Sample cURL Request

```
curl -X GET "http://127.0.0.1:8000/games/date/2025-01-27" \
    -H "device-id: device_id_1" \
    -H "device-key: devicekey"
```

#### Response Structure

```
No games found for "date" {
    "games": []
}
```

#### Possible Errors

- 403 Forbidden → Invalid or missing authentication headers.
- 500 Internal Server Error → Database connection issues.

# Testing

Successful Tests

Game found for date

Parameters: {date: "2024-12-30", device-id: "device\_id\_1", device-key: "devicekey"}

No game found for date

Parameters: {date: "2024-12-29", device-id: "device\_id\_1", device-key: "devicekey"}

```
Server response

Code Details

200 Response body

{
    "games": []
}

Response headers

content-length: 12
    content-type: application/json
    date: Fri,31 Jan 2025 09:21:49 GNT
    server: wilcorn
```

#### Unsuccessful Tests

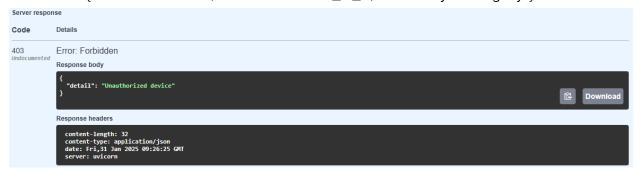
#### NULL date parameter

Parameters: {date: NULL, device-id: "device\_id\_1", device-key: "devicekey"}



#### Failed authentication

Parameters: {date: "2024-12-30", device-id: "device\_id\_1", device-key: "wrongkey"}



# Retrieve games by time

Endpoint: GET /games/time/{time}

Description: Retrieves games occurring at a specific time.

Authentication Required: Yes (device\_id and device\_key in headers).

Path Parameter:

- `time` (string) → The time to search for.

#### Sample cURL Request

curl -X GET "http://127.0.0.1:8000/games/time/18:30:00" \

- -H "device-id: device\_id\_1"  $\$
- -H "device-key: devicekey"

```
Games found for "time"
    "games": [
             "date": "2025-01-27",
             "time": "18:30:00",
             "away team": "Washington St.",
             "home team": "Miami",
             "score": {"away": 85, "home": 78},
             "winner": "Washington St.",
             "sport": "Basketball (M)"
        }
    ]
}
No games found for "time"
{
    "games": []
}
```

#### Possible Errors

- 403 Forbidden → Invalid or missing authentication headers.
- 500 Internal Server Error → Database connection issues.

#### Testing

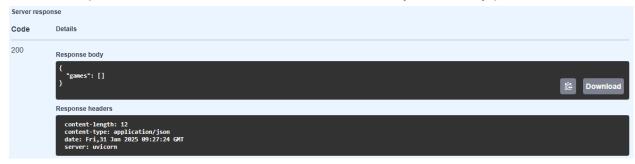
Successful Tests

Game found for time

Parameters: {time: "18:30", device-id: "device\_id\_1", device-key: "devicekey"}

#### No game found for time

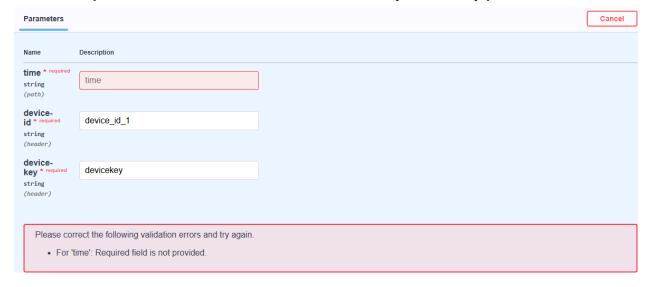
Parameters: {time: "07:00", device-id: "device\_id\_1", device-key: "devicekey"}



#### Unsuccessful Tests

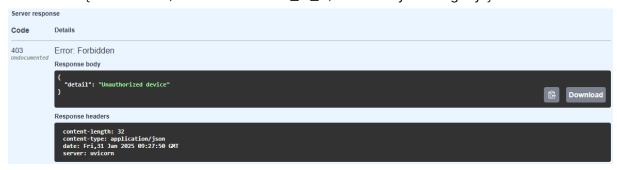
#### NULL time parameter

Parameters: {time: NULL, device-id: "device\_id\_1", device-key: "devicekey"}



#### Failed authentication

Parameters: {time: "18:30", device-id: "device\_id\_1", device-key: "wrongkey"}



# Retrieve games by date and time

```
Endpoint: GET /games/date/{date}/time/{time}
```

Description: Retrieves games occurring on a specific date and time.

Authentication Required: Yes (device\_id and device\_key in headers).

Path Parameter:

- `date` (string) → The date to search for.
- `time` (string) → The time to search for.

#### Sample cURL Request

```
curl -X GET
"http://127.0.0.1:8000/games/date/2025-01-27/time/18:30:00" \
    -H "device-id: device_id_1" \
    -H "device-key: devicekey"
```

# Response Structure

```
Games found for "date" and "time"
{
    "games": [
         {
             "date": "2025-01-27",
             "time": "18:30:00",
             "away team": "Washington St.",
             "home_team": "Miami",
             "score": {"away": 85, "home": 78},
             "winner": "Washington St.",
             "sport": "Basketball (M)"
         }
    ]
}
No games found for "date" and "time"
    "games": []
}
```

#### Possible Errors

- 403 Forbidden → Invalid or missing authentication headers.
- 500 Internal Server Error → Database connection issues.

# **Testing**

Successful Tests

Game found for date and time

Parameters: {date: "2023-06-18", time: "18:30", device-id: "device\_id\_1", device-key: "devicekey"}

```
Server response

Code Details

Response body

( "games": [
    "date": "2023-06-18",
    "time": "1813/30:90",
    "away team": "Washington St.",
    "home_team": "Galifornia",
    "score": [
    "away": 59,
    "home": 100,
    "yuinner": "California",
    "sport": "Basketball (W)"
    }

Response headers

content-length: 183
content-type: application/json
date: Fri,31 Jan 2025 09:30:28 GMT
server: uvicorn
```

No game found for date and time

Parameters: {date: "2023-06-18", time: "07:00", device-id: "device\_id\_1", device-key: "devicekey"}

```
Server response

Code Details

Response body

{ "games": [] }

Response headers

Content-length: 12
Content-type: application/json date: Fri,31 Jan 2025 09:32:47 GMT server: uvicorn
```

**Unsuccessful Tests** 

NULL date parameter

Parameters: {date: NULL, time: "18:30", device-id: "device\_id\_1", device-key: "devicekey"}



# NULL time parameter

Parameters: {date: "2023-06-18", time: NULL, device-id: "device\_id\_1", device-key: "devicekey"}



#### Failed authentication

Parameters: {date: "2023-06-18", time: "18:30", device-id: "device\_id\_1", device-key: "wrongkey"}

# Retrieve games with minimum score

```
Endpoint: GET /games/score/{min score}
```

Description: Retrieves games where either team has scored at least min\_score points.

Authentication Required: Yes (device\_id and device\_key in headers).

Path Parameter:

- `min\_score` (integer) → The minimum score to search for.

# Sample cURL Request

```
curl -X GET "http://127.0.0.1:8000/games/score/80" \
    -H "device-id: device_id_1" \
    -H "device-key: devicekey"
```

# Response Structure

"games": []

#### Possible Errors

- 403 Forbidden → Invalid or missing authentication headers.
- 500 Internal Server Error → Database connection issues.

#### **Testing**

Successful Tests

Game found for team with minimum score

Parameters: {min\_score: 100, device-id: "device\_id\_1", device-key: "devicekey"}

No game found for team with minimum score

Parameters: {min\_score: 200, device-id: "device\_id\_1", device-key: "devicekey"}

```
Server response

Code Details

200 Response body

{
    "games": []
}

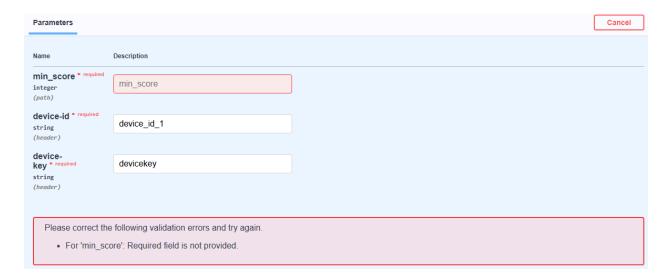
Response headers

content-length: 12
    content-type: application/json date: Fri,31 Jan 2025 19:44:53 GNT server: uvicorn
```

Unsuccessful Tests

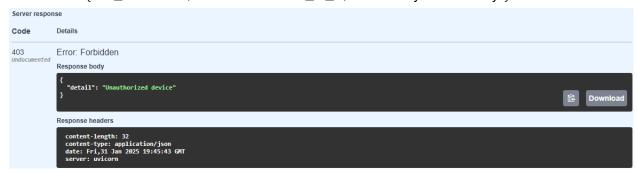
NULL min\_score parameter

Parameters: {min\_score: NULL, device-id: "device\_id\_1", device-key: "devicekey"}



#### Failed authentication

Parameters: {min\_score: 100, device-id: "admin\_id\_1", device-key: "devicekey"}



# Retrieve followed games based on UID

Endpoint: GET /games/followed/{device uid}

Description: Retrieves games based on the user's followed teams and sports.

Authentication Required: Yes (device\_id and device\_key in headers).

Path Parameter:

- `device\_uid` (string) → The uid to search for.

### Sample cURL Request

```
curl -X GET "http://127.0.0.1:8000/games/followed/12345678" \
    -H "device-id: device_id_1" \
    -H "device-key: devicekey"
```

```
Games found for "device_uid"
    "games": [
        {
             "date": "2025-02-01",
             "time": "19:00:00",
             "away team": "Stanford",
             "home team": "Washington St.",
             "score": {"away": 72, "home": 80},
             "winner": "Washington St.",
             "sport": "Basketball (M)"
        }
    ]
}
No games found for "device_uid"
    "games": []
}
```

#### Possible Errors

- `403 Forbidden` → Missing or invalid authentication headers.
- `500 Internal Server Error` → Database connection issue.

## Testing

Successful Tests

Game found for UID

Parameters: {device\_uid: "45840760", device-id: "admin\_id\_1", device-key: "devicekey"}

### No game found for UID

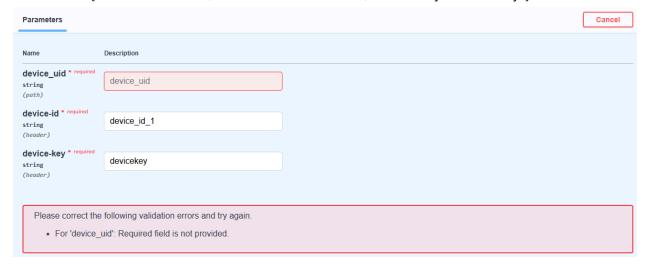
Parameters: {device\_uid: "72720687", device-id: "admin\_id\_1", device-key: "devicekey"}



#### Successful Tests

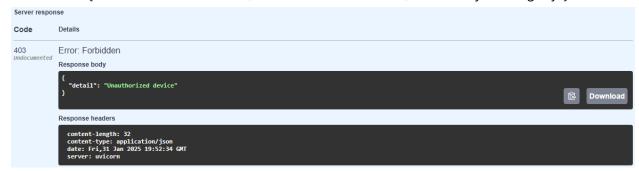
# NULL UID parameter

Parameters: {device\_uid: NULL, device-id: "admin\_id\_1", device-key: "devicekey"}



#### Failed authentication

Parameters: {device\_uid: "45840760", device-id: "admin\_id\_1", device-key: "wrongkey"}



# **POST Endpoints**

# Add Game

Endpoint: POST /games

Description: Adds a new game to the database (admin only).

Authentication: Yes (admin credentials).

## Request Body

Required Fields:

- `date` (string)
- `time` (string)
- `away\_team` (string)
- `home\_team` (string)
- `score` (json)
- 'winner' (string)
- `sport` (string)

### **Example Request**

Sample cURL request

```
curl -X POST "http://127.0.0.1:8000/games" \
    -H "device-id: admin_id_1" \
    -H "device-key: adminkey" \
    -H "Content-Type: application/json" \
    -d '{
        "date": "2025-01-27",
        "time": "18:30:00",
        "away_team": "Washington St.",
        "home_team": "Miami",
        "score": {"away": 85, "home": 78},
```

```
"winner": "Washington St.",
           "sport": "Basketball (M)"
     } '
Request Body Example
{
    "date": "2025-01-27",
    "time": "18:30:00",
    "away_team": "Washington St.",
    "home team": "Miami",
    "score": {"away": 85, "home": 78},
    "winner": "Washington St.",
    "sport": "Basketball (M)"
}
Example Response
Successful Response
{
    "message": "Game added successfully",
    "game id": 10
Unsuccessful Response - Failed authentication
    "detail": "Unauthorized access"
}
Possible Errors
- `400 Bad Request` → Missing or incorrectly formatted fields.
```

- `403 Forbidden` → User does not have admin privileges.
- `500 Internal Server Error` → Database insertion issue.

#### Testing

Pending modification to accommodate new database format

# **PUT Endpoints**

None at this time.