

Real-Time Leaderboard

Public API

September 15, 2018

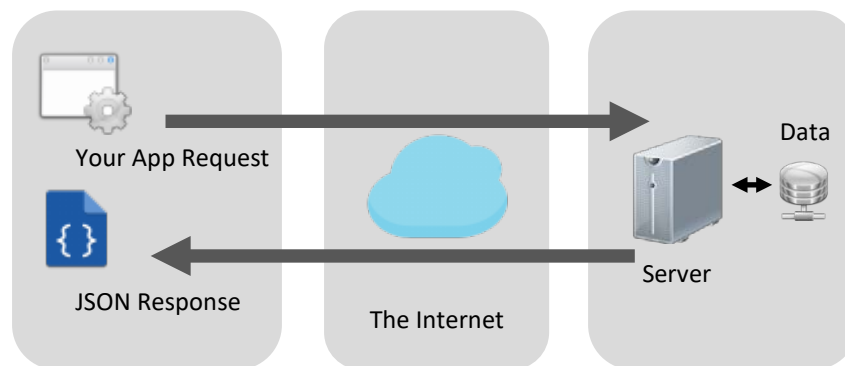
BEST Real-Time Leaderboard Public API User Guide

This guide is designed to provide information pertaining to the BEST Robotics Real-Time Leaderboard (RTL) Public API. The API is a new addition to the game day family. Through the API, teams can query match and scoring information which can be utilized in their marketing campaigns. Each API endpoint and the process of accessing is described below.

Basics

First, a brief introduction to web services for those who may not be familiar. A web service is a data-oriented application which is accessible over the internet and uses a standardized response protocol. This API has two accepted REQUEST methods and returns all responses in one of two formats. For requests which were processed successfully (a HTTP/1.0 200 OK), the response will be a JSON string. For requests which were unsuccessful, the response will be a string explanation of the issue/error. Several response headers can be issued when an error occurs including:

- HTTP/1.0 401 Unauthorized – No authorization token was found in the request
- HTTP/1.0 403 Forbidden – The authorization token was not correct
- HTTP/1.0 405 Method Not Allowed – The request type is not supported (Types for example including GET, POST, DELETE)
- HTTP/1.0 500 Internal Server Error – An issue occurred while processing the request



Your code should be able to distinguish between a successful and unsuccessful request. When a successful request is made, the response JSON string can be parsed as you require. There are several open source libraries which can encode and parse HTTP requests. Examples include AngularJS, jQuery, Newtonsoft Json.NET, and json.loads().

Below you will find information on authorization and the two available API endpoints. Endpoints are the web URL to which you place your REQUEST. In front of all requests you will need to prepend <http://best.eng.auburn.edu/apps/public/>.

Authorization

The public API requires an authorization bearer token to be sent with each request. Tokens are available through an online request form. A team only needs one token. Tokens should not be shared outside your team. The online request form can be accessed at

<http://www.bestinc.org/apps/requestaccess.php>

When forming a GET request, you should include your token in the header. The API utilizes the industry standard Authorization: Bearer TTT token format. All requests should be made via HTTP (not HTTPS).

Endpoints

The following two endpoints are available for your access. The method, parameters and response are detailed for each endpoint. Note: you should not call a single endpoint more than one time per minute on game days. As the game is designed for three minute matches, a call every three minutes is sufficient in keeping your data up to date.

Matches

GET /matches.php?hubId={string}&phase={string}

Retrieves matches for current phase or provided phase

Query Parameters

	Type	Required	Description
hubId	String	Yes	Hub Name with BEST and spaces removed
Phase	String	Optional	Seeding, Wildcard, Semifinals, Finals

Response

```
{
  "phase": "Seeding",
  "numMatches": 1,
  "matches": [
    {
      "matchNo": 1,
      "fieldId": 1,
      "fdRed": "Oak Mountain High",
      "fdBlue": "Trussville Middle",
      "fdYellow": "Berry Middle",
      "fdGreen": "Spain Park"
    }, { ... }
  ]
}
```

Scores

GET /scores.php?hubId={string}&phase={string}

Retrieves scores for current phase or provided phase

Query Parameters

	Type	Required	Description
hubId	String	Yes	Hub Name with BEST and spaces removed
Phase	String	Optional	Seeding, Wildcard, Semifinals, Finals

Response

```
{
  "matchMax":1,
  "notes":null,
  "phase": "Seeding",
  "numScores": 1,
  "scores": [
    { "rank":2,
      "teamNo":100,
      "team":"Hoover High",
      "matchLast":1,
      "score":105.2
    }, {...}
  ]
}
```

Notes: If the team has no scores or if the team is in blind mode, the following will be returned

```
{
  "matchMax":0,
  "notes":"Currently there are not scores available.",
  "phase": "Seeding",
  "scores":null
}
```

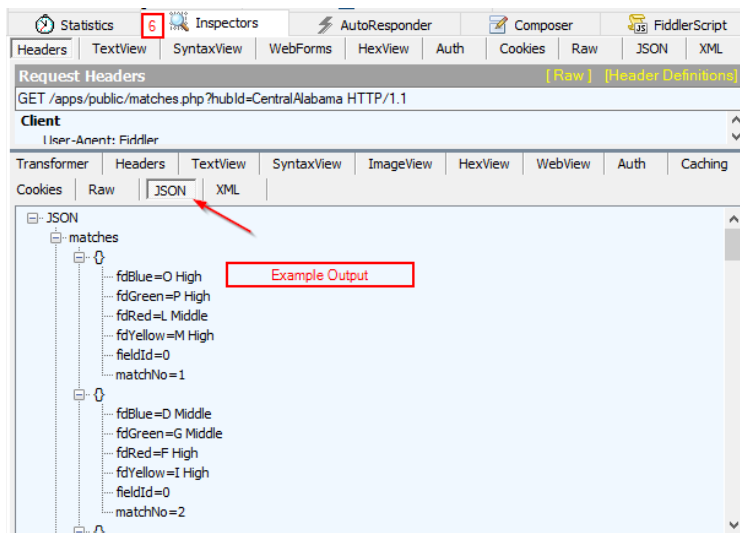
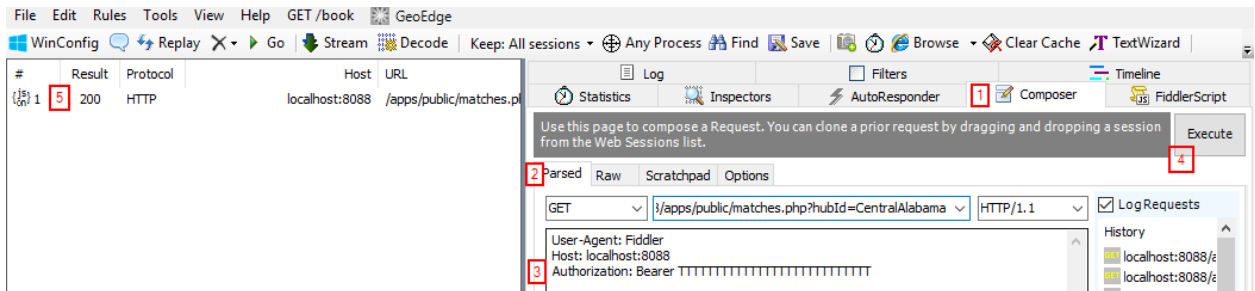
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Testing

For development, a fictitious hub Robotics BEST has been established. The hubId for Robotics BEST is Robotics. This hub will be available until the Thursday before the first Game Day competition. Only the Seeding phase is available.

To experiment with the API, we recommend downloading Telerik Fiddler (<https://www.telerik.com/download/fiddler>). It is available for Windows and Mac. The download is free; however, an email address is required. In Fiddler:

1. Click on the Composer tab.
2. With the Parse tab selected, choose the method GET and enter one of the endpoints.
3. In the box below, type "Authorization: Bearer TTT" where T is your token value.
4. Click Execute.
5. On the left side, you will see the REQUEST process and then the icon changes to JSON. Double click on the REQUEST.
6. On the right, you will see the tab is changed to Inspectors and the response of the request is shown at the bottom.



There are several other free software applications which can be used to experiment with REQUESTS and RESPONSES from web services.

Limitations

The public API is currently limited to match and score information. A rate limit of 1 call every 30 seconds is enforced to ensure the server remains stable.

Further Resources

Several additional guides are being developed to dive into the different programming languages which can be used to consume the web service. As these resources become available, they will be posted on the API request site.