

# How to use dartfish.tv API v2.0 in Power BI

*Dartfish SA, 20 December 2021, FR, v1.0*

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This document describes how to integrate dartfish.tv API v2.0 in Power BI for allowing:

- To retrieve the data associated with a video directly and automatically from dartfish.tv.
- To retrieve the data associated with a full collection directly and automatically from dartfish.tv.
- To create a video data report automatically each time a new video is uploaded to dartfish.tv.

The current document is not a tutorial in any way for Power BI Tools (see "Prerequisites" section below).

## Prerequisites

The user must:

- Install Microsoft Power BI desktop in his/her computer
- Have some knowledge of Power BI, enough to be able to create a data report with this tool.
- Possess a dartfish.tv account with administrator rights on a dartfish.tv channel on which the dartfish.tv API use has been authorized.

There is no need for the user to buy a MS Power BI Pro account for publishing their reports on dartfish.tv.

## Workflow

Here follows the complete workflow for creating a data report for dartfish.tv using Power BI:

- The user creates a new Power BI blank report, or uses an existing one in the Power BI desktop application.
- The user creates a new table inside the Power BI project by following the procedure described in the section "How to retrieve single video data with dartfish.tv API v2.0" or "How to retrieve collection data with dartfish.tv API v2.0". The newly created table uses dartfish.tv API v2.0 to retrieve dartfish.tv data in a Power BI table, which is then used as an input for creating the data report.
- If the report was blank at the beginning, the user must now create the data report by using the data table created in the previous step. If the report was not blank, the user must "adapt" the table data and structure for interacting correctly with the existing data report.
- Once the user feels that the data report is "OK", he can use it as a "template" for generating the data reports for the user's video or a full collection. This data report template can be uploaded on dartfish.tv and assigned to a specific collection.  
More info on <https://support.dartfish.tv/support/solutions/articles/27000057760>
- Each time the user publishes a video in a collection, the video data report template provided by the user is used for generating the video data report automatically. The created data report is published to Microsoft Power BI server.  
**Warning:** The collection data reports are not updated automatically each time a video is published.
- Whenever the user wants to modify a data report template, the new template must be uploaded to dartfish.tv. This new data report template will be used for all future published videos (for single video data report template) or at the next manual update of the collection report (for collection data report template).

# How to retrieve single video data with dartfish.tv API v2.0

This section describes the steps for creating a table in a Power BI project in Power BI desktop application, which will retrieve a dartfish.tv video data using dartfish.tv API v2.0.

## Step 1 - Get collection ID and match ID

Get the collection ID and match ID of a currently published video belonging to the collection in which the user wants to put the data report. This video must contain the data which will be used by the data report. In other terms, the video must contain the keywords targeted by the data report (categories at least).

For this, open an Internet web browser, log in to dartfish.tv and play the video. Then, copy the URL displayed in the web browser and extract the collection id and match id from this URL.

For example, if the URL is "https://www.dartfish.tv/Player?CR=p3c262173m4587016", the **collection ID** is **262173** and the **match ID** is **4587016**. These 2 ID's are necessary for the next steps.

## Step 2 - Get the channel key

The channel key is a serialized string containing information authorizing access to the dartfish.tv API v2.0 based on the credentials of an account, which can then be used to access the API from the Power BI desktop application without having to provide credentials and save them in the Power BI template.

**Very important: the channel key has now a limited lifetime and must be changed each time the Power BI report template needs to be modified.**

To get the channel key:

- Visit the interactive documentation of the dartfish.tv API v2.0, <https://api.dartfish.tv/swagger>. Verify you are on version v2.0.
- Authenticate yourself by giving the credentials of a valid dartfish.tv account. This account must be administrator of the desired dartfish.tv channel and the API must be enabled for this channel.

Authorize

**Available authorizations** x

**Basic authorization**

Type an email address and password of a valid account on dartfish.tv.

Username:

Password:

Authorize Close

- Select the **Access** section and choose one of the methods to get the channel key. The first one to get the channel key based on the channel ID or the second one based on the collection ID.

**Access** ▼

Get the channel key (a serialized string containing information authorizing access to the API) based on the credentials of an account. This channel key can then be used to access the API without needing to provide credentials. It is intended for use during the process of defining a Power BI template to retrieve data from the API, using the Power BI desktop app. The channel key has a limited life time.

---

**GET** `/api/v2/Access/Channel/{channelId}/ChannelKey` Get the channel key based on the channel ID and the login info of an account. 🔒

**GET** `/api/v2/Access/Collection/{collectionId}/ChannelKey` Get the channel key based on the collection ID and the login info of an account. 🔒

- Click on **Try it out**, provide the channel ID or the collection ID and finally click on **Execute**. The response of the API will be displayed a little bit lower. Copy the channel key for later use (without "").

Try it out

**collectionId** \* required

integer(\$int64) ID of the specific collection

(path)

collectionId - ID of the specific collection

Response body

```

{
  "ChannelKey": "eyJBcG1BdXRob3JpemF0aW9uSWQ0i0iI1Yzg5YzRlNC11YjA5LTQ0NTctYTI0NS01NmY0Yzcs5YjJhMjEiLCJlCjZlZm1cm10eVRva2VuIjo1MjJhOTA0MDUtYzg2NS00MTRjLT1jNDktZGFjNjUzYzFjM2YwIn0=",
  "ApiVersion": "2.0"
}

```

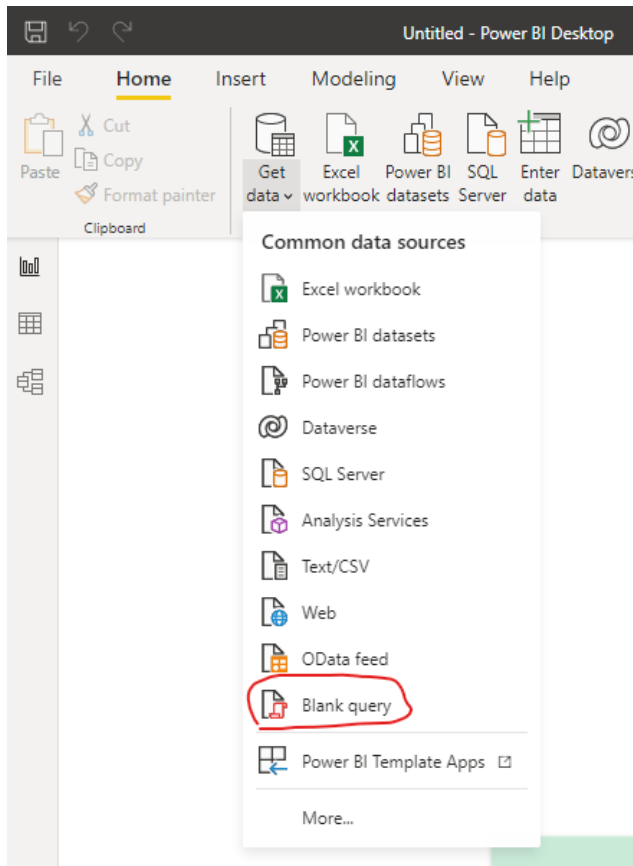
Download

All the remaining steps are performed in the Power BI desktop application in which a new blank project has been created, or an existing project opened.

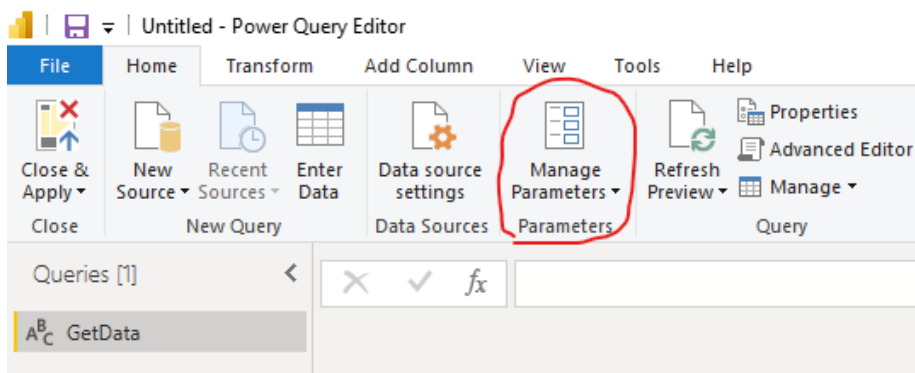
## Step 3 - Get data from dartfish.tv API v2.0 in Power BI desktop

To get data in a new empty report:

- In the toolbar, select **Get data**, and then **Blank query**. This opens a new window.



- Right click the newly created query on the left pane and select **Rename**. Rename the query as you want, e.g. GetData.
- In the toolbar, select **Manage Parameters**. This opens a new dialog as popup window.



- Add the **ChannelKey** parameter as described below by first clicking on **New**, then filling in the different fields. The **Current value** must correspond to the channel key retrieved in step 2.  
**Very important: Type must be Text.**

The screenshot shows the 'Manage Parameters' dialog box. On the left, there is a list of parameters: 'ChannelKey', 'CollectionID', and 'MatchID'. The 'ChannelKey' parameter is selected. On the right, the configuration for 'ChannelKey' is shown:

- Name:** ChannelKey
- Description:** Serialized string containing information authorizing access to the dartfish.tv API v2.0 based on the credentials of an account
- Required:**
- Type:** Text
- Suggested Values:** Any value
- Current Value:** eyJbcGIBdXRob3JpemF0aW9uSWQjOi1OWM4ODVmYy0:

**Very important: the channel key has now a limited lifetime and must be changed each time the Power BI report template needs to be modified.**

- Add the **CollectionID** parameter as described below by first clicking on **New**, then filling in the different fields. The **Current value** must correspond to the collection ID as found in step 1.  
**Very important: Type must be Text.**

The screenshot shows the 'Manage Parameters' dialog box. On the left, there is a list of parameters: 'ChannelKey', 'CollectionID', and 'MatchID'. The 'CollectionID' parameter is selected. On the right, the configuration for 'CollectionID' is shown:

- Name:** CollectionID
- Description:** ID of the collection targeted by the query
- Required:**
- Type:** Text
- Suggested Values:** Any value
- Current Value:** 89601

- Add the **MatchID** parameter as described below by first clicking on **New**, then filling in the different fields. The **Current value** must correspond to the match ID (video ID) as found in step 1.  
**Very important: Type must be Text.**

**Manage Parameters**

**Name**  
MatchID

**Description**  
ID of the match (video) which is targeted by the query

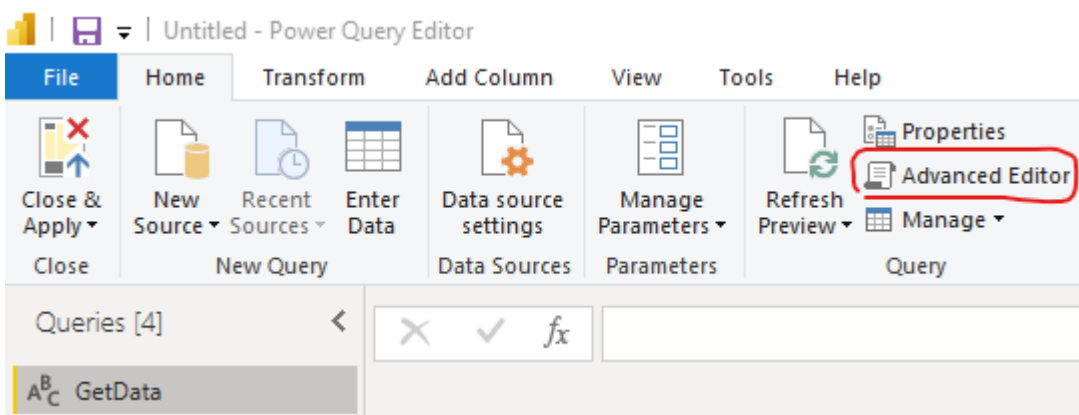
Required

**Type**  
Text

**Suggested Values**  
Any value

**Current Value**  
1234567

- Close the dialog by clicking the **OK** button.
- Select the new query (GetData) on the left pane and click **Advanced Editor** in the toolbar. This opens a new window.



- Replace all the existing code with the following piece of code:

```
let
  // Workaround with RelativePath for allowing data refresh on Power BI Services.
  Source = Json.Document(Web.Contents(
    "https://api.dartfish.tv",
    [Headers=
      [Authorization = "ChannelKey " & ChannelKey, #"Content-Type" = "application/json"],
      RelativePath = "/api/v2/video/" & CollectionID & "/" & MatchID & "/EventData",
      Content=Text.ToBinary("{\"IncludeMatchKeywords\":false}")
    ]
  )),
  StripTopElem = Source[Events],
  Unifie = List.Transform(
    StripTopElem,
    each Record.TransformFields(_, {
      {"Team", Text.Trim},
      {"ActionType", Text.Trim},
      {"UniformNumber", Text.Trim}
    },
    MissingField.UseNull
  )
),
Pivotage = Table.FromRecords(Unifie, {"Team", "ActionType", "UniformNumber"})
in
  Pivotage
```

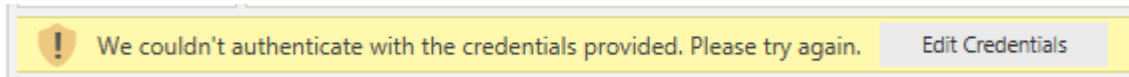
This piece of code allows Power BI to retrieve the data from the dartfish.tv API in a table and process them with all the functionalities of Power BI.

In this example, **Team**, **ActionType** and **UniformNumber** are assumed to be keyword categories. All the values are supposed to be some kind of text, so **Text.Trim** processing has been used. When the values are integers (for example), they can be transformed into genuine integers by substituting **Int64.From** for Text.Trim. In fact, any kind of processing is possible for transforming the keyword values.

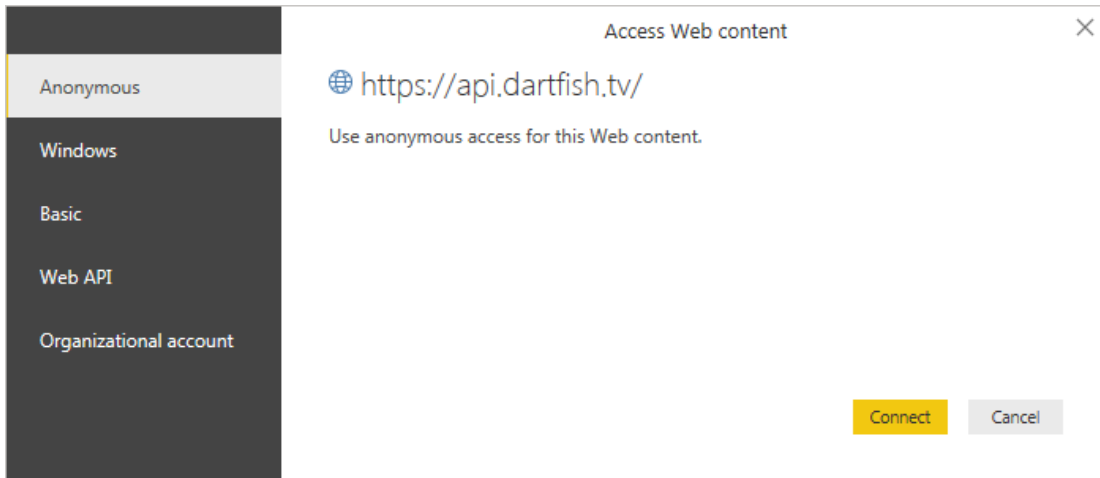
- Close the window by clicking the **Done** button.



At this point, you might get the following error message:



In this case, click on the **Edit Credentials** button. A new dialog as popup window opens:



Select **Anonymous** on the left and click the **Connect** button.

#### IMPORTANT:

By default and apart from the user defined keyword categories, the API always returns 3 predetermined "keywords" that are not localized, these keywords correspond to the 3 keywords defined in the Event Pane in the Dartfish Software Tagging Module. These keywords corresponds to the following definitions:

```
...{"Name", Text.Trim}, {"Position", Int64.From}, {"Duration", Int64.From}...
```

So, if we get back to the previous example where 3 categories where defined (**Team**, **ActionType** and **UniformNumber**), the full statement could also be:

```
...
    Unifie = List.Transform(
        StripTopElem,
        each Record.TransformFields(_, {
            {"Name", Text.Trim},
            {"Position", Int64.From},
            {"Duration", Int64.From},
            {"Team", Text.Trim},
            {"ActionType", Text.Trim},
            {"UniformNumber", Text.Trim}
        }
    ),
    MissingField.UseNull
),
    Pivotage = Table.FromRecords(Unifie, {"Name", "Position", "Duration", "Team", "ActionType",
"UniformNumber"})
in
    Pivotage
```

In this statement, the 3 predefined keywords are extracted (Name, Position, Duration) along with the 3 custom category keywords Team, ActionType and UniformNumber.

## Step 4 - Create the report for the retrieved data

This is out of scope of this tutorial and is part of the prerequisites of this document:  
Have some knowledge of Power BI, enough to be able to create a data report with this tool.

### Hints

By modifying the **MatchID** parameter in Power BI and refreshing the Preview (by clicking on "Refresh Preview" in Power BI desktop application), it is possible to get the data from different videos. This allows checking the validity of the data report with data coming from different (published) videos.

## How to retrieve collection data with dartfish.tv API v2.0

This section describes the steps for creating a table in a Power BI project in Power BI desktop application, which will retrieve the data for all the videos in a dartfish.tv collection using dartfish.tv API.

These steps are very similar to the steps to retrieve a single video data, so only the differences will be described in the next paragraphs.

**step 1** - get the collection id of the collection in which the user wants to put the data report. This collection must contain at least one video containing the data which will be used by the data report. In other terms, the videos in the collection must contain the keywords targeted by the data report (categories at least).

For this, open an Internet web browser, log in to dartfish.tv and visit the collection. Then, copy the URL displayed in the web browser and extract the collection id from this URL.

For example, if the URL is "https://www.dartfish.tv/Videos?CR=p3c262173", the **collection ID** is **262173**. This ID is necessary for the next steps.

There are 2 more differences:

1. At **step 3**, the **MatchId** parameter is not required
2. At **step 3**, the piece of code must be adapted: by modifying the **RelativePath** statement, it would be possible to invoke the "api/v{version}/collection/{collectionId}/EventData" function for getting the data for all the videos in the dartfish.tv collection. In this case, the **RelativePath** statement is modified as follows :

```
RelativePath = "/api/v2/collection/" & CollectionID & "/EventData",
```

## Important note

It is possible to modify and adapt the piece of code described in the previous sections for invoking other functions of the dartfish.tv API.

For more information, please check the online help of dartfish.tv API with the url:  
<https://api.dartfish.tv/swagger>.

# Migration from API v1.0 to API v2.0

This section describes how to modify an existing Power BI report template using the dartfish.tv API v1.0 to use the new dartfish.tv API v2.0.

There are only 2 small changes to do:

- The authorization ID cannot be used anymore as the channel key with the dartfish.tv API v2.0. The channel key must be retrieved from the API following the instructions described above in [Step 2 - Get the channel key](#).

**Very important: the channel key has now a **limited lifetime** and must be changed each time the Power BI report template needs to be modified.**

- The piece of code in **Advanced Editor**, used to retrieve the data, must be slightly adapted by modifying the **RelativePath** statement as follows :

```
RelativePath="/api/v2/video/"&ZeCollectionID&"/"&ZeMatchID&"/EventData",
```

**Very important: **v2** comes before **video** (v1 was after video)!!!**

## Current Limitations

The Dartfish automated data report publishing process is still under development. Here are some currently known limitations:

- The data report template for a single video will be used for all the videos published in the collection referenced by the collection id in the data report. There is currently no way to modify this parameter during the publishing process.
- Whenever the user wants to modify a data report template, the new template must be uploaded to dartfish.tv. This new data report template will be used for all future published videos (for single video data report template) or at the next manual update of the collection report (for collection data report template). However, the data reports for all the documents already published on dartfish.tv are not updated automatically with this new data report template.
- Only one-way filtering, from the data report to the video player. The other way, from the video player to the data report, is currently not possible. This is a limitation of Power BI.
- Manipulated data, that is different from the original tagged data, does not filter the video at all. Currently, there is no way for dartfish.tv to know that, and how, some data have been manipulated in Power BI from the original data and then there is no way to know how to use these manipulated data to filter the video.
- Mixing event keywords and match (video) keywords is not working for the moment.