

# Package: **impectR** (via r-universe)

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**Title** Access Data from the 'Impect' API

**Version** 2.5.5

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**Description** Pull data from the 'Impect' Customer API  
<<https://glossary.impect.com/api-design>>. The package can  
retrieve data such as events or match sums.

**License** MIT + file LICENSE

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rlang

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---

getAccessToken	<i>Get an access token from the 'Impect' Customer API</i>
----------------	---

---

## Description

Get an access token from the 'Impect' Customer API

## Usage

```
getAccessToken(
    username,
    password,
    token_url =
        "https://login.impect.com/auth/realms/production/protocol/openid-connect/token"
)
```

## Arguments

username	your 'IMPECT' username
password	your 'IMPECT' password
token_url	host specific token url

## Value

a string containing a bearer token

**Examples**

```
# Toy example: this will error quickly (no credentials)
try(getAccessToken(username = "invalidUser", password = "invalidPassword"))

# Real usage: requires valid credentials
## Not run:
token <- getAccessToken(username = "yourUsername", password = "yourPassword")

## End(Not run)
```

---

getEvents	<i>Return a dataframe that contains all events and kpi values for a set of given match IDs</i>
-----------	--

---

**Description**

Return a dataframe that contains all events and kpi values for a set of given match IDs

**Usage**

```
getEvents(
  matches,
  token,
  include_kpis = TRUE,
  include_set_pieces = FALSE,
  host = "https://api.impect.com"
)
```

**Arguments**

matches	'IMPECT' match ID or a list of match IDs
token	bearer token
include_kpis	include KPIs in event data
include_set_pieces	include additional set piece data in event data
host	host environment

**Value**

a dataframe containing all events and kpi values for a set of given match IDs

**Examples**

```
# Toy example: this will error quickly (no API token)
try(events <- getEvents(
  matches = c(0, 1),
  token = "invalid",
  include_kpis = T,
  include_set_pieces = F
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
events <- getEvents(
  matches = c(84248, 158150),
  token = "yourToken",
  include_kpis = T,
  include_set_pieces = F
)

## End(Not run)
```

---

getFormations	<i>Return a dataframe that contains all starting formations for a set of given match IDs</i>
---------------	--

---

**Description**

Return a dataframe that contains all starting formations for a set of given match IDs

**Usage**

```
getFormations(matches, token, host = "https://api.impect.com")
```

**Arguments**

matches	'IMPECT' match ID or a list of match IDs
token	bearer token
host	host environment

**Value**

a dataframe containing all starting formations for a set of given match IDs

**Examples**

```
# Toy example: this will error quickly (no API token)
try(events <- getFormations(
  matches = c(0, 1),
  token = "invalid"
```

```
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
formations <- getFormations(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

---

getIterations	<i>Return a dataframe containing all iterations available to the user</i>
---------------	---

---

### Description

Return a dataframe containing all iterations available to the user

### Usage

```
getIterations(token, host = "https://api.impect.com")
```

### Arguments

token	bearer token
host	host environment

### Value

a dataframe containing all iterations available to the user

### Examples

```
# Toy example: this will error quickly (no API token)
try(events <- getIterations(
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
iterations <- getIterations(
  token = "yourToken"
)

## End(Not run)
```

---

getMatches	<i>Return a dataframe with basic information for all matches for a given iteration ID</i>
------------	---

---

### Description

Return a dataframe with basic information for all matches for a given iteration ID

### Usage

```
getMatches(iteration, token, host = "https://api.impect.com")
```

### Arguments

iteration	'IMPECT' iteration ID
token	bearer token
host	host environment

### Value

a dataframe containing all matches for a given iteration ID

### Examples

```
# Toy example: this will error quickly (no API token)
try(matchplan <- getMatches(
  iteration = 0,
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
matchplan <- getMatches(
  iteration = 1004,
  token = "yourToken"
)

## End(Not run)
```

---

`getPlayerIterationAverages`

*Return a dataframe that contains all player averages for a given iteration ID*

---

### Description

Return a dataframe that contains all player averages for a given iteration ID

### Usage

```
getPlayerIterationAverages(iteration, token, host = "https://api.impect.com")
```

### Arguments

<code>iteration</code>	'IMPECT' iteration ID
<code>token</code>	bearer token
<code>host</code>	host environment

### Value

a dataframe containing the KPI averages aggregated per player and position for the given iteration ID

### Examples

```
# Toy example: this will error quickly (no API token)
try(player_avgs <- getPlayerIterationAverages(
  iteration = 0,
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
player_avgs <- getPlayerIterationAverages(
  iteration = 1004,
  token = "yourToken"
)

## End(Not run)
```

---

`getPlayerIterationScores`

*Return a dataframe that contains all player scores for a given iteration ID*

---

### Description

Return a dataframe that contains all player scores for a given iteration ID

### Usage

```
getPlayerIterationScores(  
  iteration,  
  token,  
  positions = NULL,  
  host = "https://api.impect.com"  
)
```

### Arguments

<code>iteration</code>	'IMPECT' iteration ID
<code>token</code>	bearer token
<code>positions</code>	optional list of position names. Must be one of: "GOALKEEPER", "LEFT_WINGBACK_DEFENDER", "RIGHT_WINGBACK_DEFENDER", "CENTRAL_DEFENDER", "DEFENSE_MIDFIELD", "CENTRAL_MIDFIELD", "ATTACKING_MIDFIELD", "LEFT_WINGER", "RIGHT_WINGER", "CENTER_FORWARD". If not submitted, function will return all positions individually.
<code>host</code>	host environment

### Value

a dataframe containing the player scores aggregated per player for the given iteration ID and list of positions

### Examples

```
# Toy example: this will error quickly (no API token)  
try(player_scores <- getPlayerIterationScores(  
  iteration = 0,  
  positions = c("INVALID_POSITION_1", "INVALID_POSITION_2"),  
  token = "invalid"  
)  
)  
  
# Real usage: requires valid Bearer Token from `getAccessToken()`  
## Not run:  
player_scores <- getPlayerIterationScores(  
  iteration = 1004,
```

```

    positions = c("CENTRAL_DEFENDER", "DEFENSE_MIDFIELD"),
    token = "yourToken"
  )

  ## End(Not run)

```

---

`getPlayerMatchScores` *Return a dataframe that contains all player scores for a given match ID and list of positions*

---

### Description

Return a dataframe that contains all player scores for a given match ID and list of positions

### Usage

```

getPlayerMatchScores(
  matches,
  token,
  positions = NULL,
  host = "https://api.impect.com"
)

```

### Arguments

<code>matches</code>	'IMPECT' match IDs
<code>token</code>	bearer token
<code>positions</code>	optional list of position names. Must be one of: "GOALKEEPER", "LEFT_WINGBACK_DEFENDER", "RIGHT_WINGBACK_DEFENDER", "CENTRAL_DEFENDER", "DEFENSE_MIDFIELD", "CENTRAL_MIDFIELD", "ATTACKING_MIDFIELD", "LEFT_WINGER", "RIGHT_WINGER", "CENTER_FORWARD". If not submitted, function will return all positions individually.
<code>host</code>	host environment

### Value

a dataframe containing the scores aggregated per player and position for the given match ID and list of positions

### Examples

```

# Toy example: this will error quickly (no API token)
try(player_match_scores <- getPlayerMatchScores(
  matches = c(0, 1),
  positions = c("INVALID_POSITION_1", "INVALID_POSITION_2"),
  token = "invalid"
))

```

```
# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
player_match_scores <- getPlayerMatchScores(
  matches = c(84248, 158150),
  positions = c("CENTRAL_DEFENDER", "DEFENSE_MIDFIELD"),
  token = "yourToken"
)

## End(Not run)
```

---

getPlayerMatchsums      *Return a dataframe that contains all player matchsums for a given match ID*

---

### Description

Return a dataframe that contains all player matchsums for a given match ID

### Usage

```
getPlayerMatchsums(matches, token, host = "https://api.impect.com")
```

### Arguments

matches	'IMPECT' match IDs
token	bearer token
host	host environment

### Value

a dataframe containing the matchsums aggregated per player and position for the given match ID

### Examples

```
# Toy example: this will error quickly (no API token)
try(player_match_sums <- getPlayerMatchsums(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
player_match_sums <- getPlayerMatchsums(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

---

`getPlayerProfileScores`

*Return a dataframe that contains all player profile scores for a given iteration ID*

---

### Description

Return a dataframe that contains all player profile scores for a given iteration ID

### Usage

```
getPlayerProfileScores(  
  iteration,  
  positions,  
  token,  
  host = "https://api.impect.com"  
)
```

### Arguments

<code>iteration</code>	'IMPECT' iteration ID
<code>positions</code>	list of position names. Must be one of: "GOALKEEPER", "LEFT_WINGBACK_DEFENDER", "RIGHT_WINGBACK_DEFENDER", "CENTRAL_DEFENDER", "DEFENSE_MIDFIELD", "CENTRAL_MIDFIELD", "ATTACKING_MIDFIELD", "LEFT_WINGER", "RIGHT_WINGER", "CENTER_FORWARD"
<code>token</code>	bearer token
<code>host</code>	host environment

### Value

a dataframe containing the player profilescores aggregated per player for the given iteration ID and list of positions

### Examples

```
# Toy example: this will error quickly (no API token)  
try(player_profile_scores <- getPlayerProfileScores(  
  iteration = 0,  
  positions = c("INVALID_POSITION_1", "INVALID_POSITION_2"),  
  token = "invalid"  
)  
)  
  
# Real usage: requires valid Bearer Token from `getAccessToken()`  
## Not run:  
player_profile_scores <- getPlayerProfileScores(  
  iteration = 1004,  
  positions = c("CENTRAL_DEFENDER", "DEFENSE_MIDFIELD"),
```

```

    token = "yourToken"
  )

  ## End(Not run)

```

---

getSetPieces	<i>Return a dataframe that contains all set pieces and aggregated kpi values per set piece sub phase for a set of given list of match IDs</i>
--------------	---

---

### Description

Return a dataframe that contains all set pieces and aggregated kpi values per set piece sub phase for a set of given list of match IDs

### Usage

```
getSetPieces(matches, token, host = "https://api.impect.com")
```

### Arguments

matches	list fo 'IMPECT' match IDs
token	bearer token
host	host environment

### Value

a dataframe containing all set pieces and aggregated kpi values per set piece sub phase for a set of given list of match IDs

### Examples

```

# Toy example: this will error quickly (no API token)
try(set_pieces <- getSetPieces(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
set_pieces <- getSetPieces(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)

```

---

getSquadCoefficients    *Return a dataframe that contains squad ratings for a given iteration ID*

---

### Description

Return a dataframe that contains squad ratings for a given iteration ID

### Usage

```
getSquadCoefficients(iteration, token, host = "https://api.impect.com")
```

### Arguments

iteration	'IMPECT' iteration ID
token	bearer token
host	host environment

### Value

a dataframe containing the squad ratings for the given iteration ID

### Examples

```
# Toy example: this will error quickly (no API token)
try(squad_ratings <- getSquadRatings(
  iteration = 0,
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
squad_ratings <- getSquadRatings(
  iteration = 1004,
  token = "yourToken"
)

## End(Not run)
```

---

```
getSquadIterationAverages
```

*Return a dataframe that contains all squads averages for a given iteration ID*

---

### Description

Return a dataframe that contains all squads averages for a given iteration ID

### Usage

```
getSquadIterationAverages(iteration, token, host = "https://api.impect.com")
```

### Arguments

iteration	'IMPECT' iteration ID
token	bearer token
host	host environment

### Value

a dataframe containing the KPI averages aggregated per squad for the given iteration ID

### Examples

```
# Toy example: this will error quickly (no API token)
try(squad_avgs <- getSquadIterationAverages(
  iteration = 0,
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
squad_avgs <- getSquadIterationAverages(
  iteration = 1004,
  token = "yourToken"
)

## End(Not run)
```

---

`getSquadIterationScores`

*Return a dataframe that contains all squads scores for a given iteration ID*

---

**Description**

Return a dataframe that contains all squads scores for a given iteration ID

**Usage**

```
getSquadIterationScores(iteration, token, host = "https://api.impect.com")
```

**Arguments**

<code>iteration</code>	'IMPCET' iteration ID
<code>token</code>	bearer token
<code>host</code>	host environment

**Value**

a dataframe containing the squad scores aggregated per squad for the given iteration ID

**Examples**

```
# Toy example: this will error quickly (no API token)
try(squad_scores <- getSquadIterationScores(
  iteration = 0,
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
squad_scores <- getSquadIterationScores(
  iteration = 1004,
  token = "yourToken"
)

## End(Not run)
```

---

getSquadMatchScores	<i>Return a dataframe that contains squad level scores and ratios for a given match ID</i>
---------------------	--

---

### Description

Return a dataframe that contains squad level scores and ratios for a given match ID

### Usage

```
getSquadMatchScores(matches, token, host = "https://api.impect.com")
```

### Arguments

matches	'IMPECT' match IDs
token	bearer token
host	host environment

### Value

a dataframe containing the scores and rations aggregated per squad for the given match ID

### Examples

```
# Toy example: this will error quickly (no API token)
try(squad_match_scores <- getSquadMatchScores(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
squad_match_scores <- getSquadMatchScores(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

---

getSquadMatchsums	<i>Return a dataframe that contains squad level matchsums for a given match ID</i>
-------------------	--

---

### Description

Return a dataframe that contains squad level matchsums for a given match ID

### Usage

```
getSquadMatchsums(matches, token, host = "https://api.impect.com")
```

### Arguments

matches	'IMPECT' match IDs
token	bearer token
host	host environment

### Value

a dataframe containing the matchsums aggregated per squad for the given match ID

### Examples

```
# Toy example: this will error quickly (no API token)
try(squad_match_sums <- getSquadMatchsums(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
squad_match_sums <- getSquadMatchsums(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

---

getSquadRatings	<i>Return a dataframe that contains squad ratings for a given iteration ID</i>
-----------------	--

---

### Description

Return a dataframe that contains squad ratings for a given iteration ID

### Usage

```
getSquadRatings(iteration, token, host = "https://api.impect.com")
```

### Arguments

iteration	'IMPECT' iteration ID
token	bearer token
host	host environment

### Value

a dataframe containing the squad ratings for the given iteration ID

### Examples

```
# Toy example: this will error quickly (no API token)
try(squad_ratings <- getSquadRatings(
  iteration = 0,
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
squad_ratings <- getSquadRatings(
  iteration = 1004,
  token = "yourToken"
)

## End(Not run)
```

---

getStartingPositions *Return a dataframe that contains all starting positions for a set of given match IDs*

---

### Description

Return a dataframe that contains all starting positions for a set of given match IDs

### Usage

```
getStartingPositions(matches, token, host = "https://api.impect.com")
```

### Arguments

matches	'IMPECT' match ID or a list of match IDs
token	bearer token
host	host environment

### Value

a dataframe containing all starting positions for a set of given match IDs

### Examples

```
# Toy example: this will error quickly (no API token)
try(starting_pos <- getStartingPositions(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
starting_pos <- getStartingPositions(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

---

getSubstitutions	<i>Return a dataframe that contains all line-up changes for a set of given match IDs</i>
------------------	--

---

### Description

Return a dataframe that contains all line-up changes for a set of given match IDs

### Usage

```
getSubstitutions(matches, token, host = "https://api.impect.com")
```

### Arguments

matches	'IMPECT' match ID or a list of match IDs
token	bearer token
host	host environment

### Value

a dataframe containing all line-up changes for a set of given match IDs

### Examples

```
# Toy example: this will error quickly (no API token)
try(subs <- getSubstitutions(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
subs <- getSubstitutions(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

---

TokenBucket-class      *TokenBucket Class*

---

### Description

This class represents a token bucket, which is a rate limiting mechanism used to control the frequency of certain actions or requests based on available tokens. Tokens are added to the bucket at a specified rate and can be consumed when needed.

### Fields

capacity The maximum number of tokens in the bucket.  
tokens The number of tokens currently available in the bucket.  
interval The duration in seconds after which the bucket gets refilled.  
last\_update The timestamp of the last update to the bucket.

### Examples

```
try({  
  # create token bucket  
  bucket <- TokenBucket(  
    capacity = 10,  
    tokens = 10,  
    intervall = 1,  
    last_update = Sys.Time()  
  )  
  
  # add tokens to bucket  
  bucket$addTokens()  
  
  # check if a token is available  
  bucket$isTokenAvailable  
  
  # consume token  
  bucket$consumeToken  
})
```

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