# d2api Documentation

Release 1.1

**Raghav Sairam** 

# Contents

1	Insta	nstallation 3			
	1.1	Install using pip (recommended)	3		
	1.2	Build from source	3		
2	Endp	points	5		
3	Docu	mentation	9		
	3.1	get_match_history()	9		
	3.2	get_match_details()	9		
	3.3	get_heroes()	12		
	3.4	get_game_items()	12		
	3.5	get_tournament_prize_pool()	12		
	3.6	get_live_league_games()	13		
	3.7	get_top_live_game()	14		
	3.8	get_team_info_by_team_id()	15		
	3.9	get_broadcaster_info()	15		
	3.10	get_player_summaries()	15		
	3.11	Common wrappers and entities	16		
4	Tuto	rial	19		
	4.1	Getting started	19		
	4.2	Examples			
Pv	thon N	Module Index	23		

This Python library is an unofficial wrapper and parser for the Dota 2 Web API by Valve.

Contents 1

2 Contents

# CHAPTER 1

Installation

# 1.1 Install using pip (recommended)

Install d2api from pip using:

\$ pip install d2api

### 1.2 Build from source

This would install the latest version of d2api. You can download the latest version of the code from the git repository and run:

```
$ git clone https://github.com/whoophee/d2api/ && cd d2api/
$ python setup.py install
```

# CHAPTER 2

### **Endpoints**

```
class d2api.APIWrapper(api_key=None, parse_response=True)
```

Wrapper initialization requires either environment variable D2\_API\_KEY be set, or api\_key be provided as an argument.

#### **Parameters**

- api\_key (str) Steam API key
- parse\_response (bool, optional) set to False to get an unparsed json string (default True)

#### get\_broadcaster\_info(\*\*kwargs)

Get the broadcasting status of a user.

#### **Parameters**

- account\_id(int) 32/64-bit account ID
- steam\_account (SteamAccount) Used in place of account\_id

Return type BroadcasterInfo

```
get_game_items (**kwargs)
```

A list of items in Dota 2.

Parameters language (string, optional) - The language to provide hero names in

Return type GameItems

```
get_heroes (**kwargs)
```

A list of heroes in Dota 2.

#### **Parameters**

- language (string, optional) The language to provide hero names in
- itemizedonly (bool, optional) Return a list of itemized heroes only

Return type Heroes

#### get\_live\_league\_games (\*\*kwargs)

A list of in-progress league matches, as well as their details at the time of query.

#### Return type LiveLeagueGames

#### get\_match\_details (match\_id, \*\*kwargs)

Detailed information about a particular match.

Parameters match\_id(int, string)-Match ID

Return type MatchDetails

#### get\_match\_history(\*\*kwargs)

A list of matches, filterable by various parameters.

#### **Parameters**

- hero\_id (int, optional) A list of hero IDs can be fetched via the get\_heroes() method
- hero (Hero, optional) Used in place of hero\_id
- game\_mode (int, optional) Games of this game mode are fetched
- **skill** (*int*, *optional*) Skill bracket for the matches (Ignored if an account ID is specified)
- min\_players (int, optional) Minimum amount of players in a match for the match to be returned.
- account\_id(int, optional) 32/64-bit account ID
- steam\_account (SteamAccount, optional) Used in place of account\_id
- league\_id (int, optional) Only return matches from this league. get\_league\_listing() has been discontinued
- **start\_at\_match\_id** (*int*, *optional*) Start searching for matches equal to or older than this match ID
- matches\_requested(int, optional) Defaults to 100
- tournament\_games\_only(int, optional) 0 = False, 1 = True

**Return type** *MatchHistory* 

#### get\_match\_history\_by\_sequence\_num(\*\*kwargs)

A list of matches ordered by sequence number. Uses a parser similar to that of <code>get\_match\_history()</code> method

#### **Parameters**

- **start\_at\_match\_seq\_num** (*int*) The match sequence number to start returning results from
- matches\_requested(int, optional) Defaults to 100

Return type MatchHistory

#### get\_player\_summaries (\*\*kwargs)

Get Steam details of users.

#### **Parameters**

- account\_ids (list(int)) 32/64-bit account ID
- steam\_accounts (list(SteamAccount)) Used in place of account IDs

#### **Return type** *PlayerSummaries*

#### get\_team\_info\_by\_team\_id(\*\*kwargs)

A list of teams' information.

#### **Parameters**

- start\_at\_team\_id(int, optional) The team id to start returning results from
- teams\_requested (int, optional) The amount of teams to return

Return type TeamInfoByTeamID

#### get\_top\_live\_game (partner=0, \*\*kwargs)

Details of on-going live games.

Parameters partner (int, optional) – Which partner's games to use (default 0)

Return type TopLiveGame

#### get\_tournament\_prize\_pool(\*\*kwargs)

The current prizepool of specific tournaments.

Parameters leagueid (int) - The ID of the league to get the prize pool of

Return type TournamentPrizePool

#### d2api.update\_local\_data(purge=True)

Synchronize local data with current repository data

Parameters purge (bool) – Set to True to delete local content

# CHAPTER 3

#### **Documentation**

There are several response types/entities across the different endpoints of the Dota 2 WebAPI. This API aims at removing inconsistencies and unifying the response content.

All variables belonging to a class are accessed using the \_\_getitem\_\_ method (similar to a dict). See *examples* for more details.

### 3.1 get\_match\_history()

#### **Variables**

- match\_id (int) The unique ID of a match
- match\_seq\_num (int) Represents the sequence in which matches were recorded
- **start\_time** (*int*) Unix timestamp of game begin time
- **lobby\_type** (*int*) Integer representing type of lobby
- players (list (PlayerMinimal)) List of player summaries

### 3.2 get\_match\_details()

```
class d2api.src.wrappers.MatchDetails (response_text)
     get_match_details() response object
```

#### Variables

```
• players_minimal (PlayerMinimal) – List of players represented minimally
                • picks_bans (PickBan) - List of picks/bans
                • season (int) – The season in which the game was played
                • winner (str) - Side that won the game (radiant/dire)
                • duration (int) – Duration of the game (in seconds)
                • pre_game_duration (int) – Duration for game to begin (in seconds)
                • start_time (int) – Unix timestamp of match start
                • match_seq_num (int) - Number denoting the order in which matches were recorded
                • radiant_buildings (Buildings) - Radiant building statuses at the end of the game
                • dire_buildings (Buildings) – Dire building statuses at the end of the game
                • cluster (int) – The server cluster the match was played upon (used to fetch replays)
                • first_blood_time (int) – Time of first-blood occurrance
                • lobby_type (int) - Type of lobby
                • human_players (int) - Number of human players in the game
                • leagueid (int) – The league that this match was a part of
                • positive_votes (int) - The number of thumbs-up the game has received by users
                • negative_votes (int) - The number of thumbs-down the game has received by users
                • game_mode (int) - Game mode
                • engine (int) - Source 1/Source 2
                • radiant_score (int) - TODO
                • dire_score (int) - TODO
                • flags - TODO
     has leavers()
              Returns True if the game contains a leaver
              Return type bool
     leavers()
              Returns List of leavers in a game.
              Return type list(SteamAccount)
class d2api.src.wrappers.PlayerUnit (default_obj={})
     An inventoried hero unit
          Variables
                • steam_account (SteamAccount) - Steam account of player
                • side (str) – Side to which a player belongs (radiant/dire)
                • hero (Hero) - Hero played
                • kills (int) – Number of kills at the end of the match
```

• players (PlayerUnit) - List of players in the game

- **deaths** (*int*) Number of deaths at the end of the match
- **assists** (*int*) Number of assists at the end of the match
- leaver\_status (int) Type of leaver
- gold (int) Amount of gold remaining at the end of the match
- last\_hits (int) Number of list hits at the end of the match
- denies (int) Number of denies at the end of the game
- gold\_per\_minute Overall gold/minute
- xp\_per\_minute Overall XP/min
- **gold\_spent** (*int*) Amount of gold spent during the match
- hero\_damage (int) Total damage done to other heroes at the end of the match
- tower\_damage (int) Total damage done to opponent towers at the end of the match
- **hero\_healing** (int) Total healing done to other heroes at the end of the match
- additional\_units (list (AdditionalUnit)) Additional units belonging to the current unit
- inventory (list (Item)) List of inventory items
- backpack (list (Item)) List of backpack items
- ability upgrades (list (AbilityInfo)) Ability upgrade information

#### all items()

Returns Combined list of inventory and backpack items

Return type list(*Item*)

**class** d2api.src.wrappers.**AdditionalUnit** (*default\_obj={}*)

An inventoried unit besides heroes (e.g. Lone druid bear)

#### Variables

- inventory (list (Item)) List of inventory items
- backpack (list (Item)) List of backpack items

#### all items()

Returns Combined list of inventory and backpack items

**Return type** list(*Item*)

**class** d2api.src.wrappers.**PickBan** (*default\_obj={}*)
Reprents a pick/ban during a game

#### **Variables**

- is\_pick (bool) True if the hero was picked
- hero (Hero) Hero being picked/banned
- **side** (*str*) Side that picked/banned this hero (radiant/dire)
- order (int) Order in which the hero was picked/banned

### 3.3 get\_heroes()

```
class d2api.src.wrappers.Heroes (response_text)
        get_heroes () response object
```

#### Variables

- heroes (list (LocalizedHero)) List of localized hero information
- count (int) Number of heroes returned

class d2api.src.wrappers.LocalizedHero (default\_obj={})
 Localized hero information

#### Variables

- name (str) Hero name
- id (ind) Hero ID
- localized\_name (str) Name of hero in language specified

### 3.4 get\_game\_items()

Variables game\_items (list (LocalizedGameItem)) - List of localized item information

class d2api.src.wrappers.LocalizedGameItem(default\_obj={})
 Localized item information

#### Variables

- id (int) Item ID
- name(str) Item name
- cost (int) Cost of item
- **secret\_shop** (bool) True if the item is sold in secret shop
- **side\_shop** (bool) True if the item is sold in side shop
- recipe (bool) True if it is a recipe
- localized name (str) Name of item in language specified

### 3.5 get\_tournament\_prize\_pool()

#### **Variables**

- prize pool (int) Prize pool
- league\_id (int) League ID for which prize pool was fetched

### 3.6 get\_live\_league\_games()

```
class d2api.src.wrappers.LiveLeagueGames (response_text)
     get live league games () response object
          Variables games (list (Game)) - List of games
class d2api.src.wrappers.Game(default obj={})
     Summary of a live league game
          Variables
               • radiant team (TeamInfo) - Radiant team information
               • dire_team (TeamInfo) - Dire team information
               • players (list (PlayerMinimal)) - List of players in the game
               • scoreboard (Scoreboard) - Game scoreboard at time of query
               • lobby_id(int) - ID of lobby
               • match_id (int) - Unique ID used to identify match
               • spectators (int) – Number of spectators
               • league id (int) - Unique ID for the league of the match
               • league_node_id (int) – Unique ID of node within the league
               • stream_delay_s (int) – Stream delay in seconds
               • radiant_series_win (int) - Number of wins by radiant team
               • dire_series_win (int) - Number of wins by dire team
               • series_type (int) – Type of series
class d2api.src.wrappers.Scoreboard(default_obj={})
     Scoreboard of live game
          Variables
               • duration (int) – Duration of the game at time of query
               • roshan_respawn_timer (int) - Time left for Roshan to respawn
               • radiant (TeamLive) - Radiant team summary
               • dire (TeamLive) - Dire team summary
class d2api.src.wrappers.TeamLive(default_obj={})
     Information of a team in live game
          Variables
               • score (int) - Current number of kills by the team
               • buildings (Buildings) - State of buildings
               • picks (list (Hero)) - List of heroes picked
               • bans (list (Hero)) - List of heroes banned
               • players (list (PlayerLive)) - List of player summaries
class d2api.src.wrappers.PlayerLive(default_obj={})
```

Information of a player in live game

#### **Variables**

- player\_slot (int) Slot of player within the team
- steam\_account (SteamAccount) Steam account of the player
- hero (Hero) Hero played
- **kills** (*int*) Number of kills
- **deaths** (int) Number of deaths
- assists (int) Number of assists
- last hits Number of last hits
- denies (int) Number of denies
- gold (int) Current amount of gold
- level (int) Current level
- gold\_per\_min (int) gold/min at time of query
- xp\_per\_min (int) XP/min at time of query
- abilities (list (AbilityInfo)) List of ability information
- ultimate\_state (int) Current state of ultimate
- ultimate\_cooldown (int) Remaining time for ultimate to come off cooldown
- inventory (list (Item)) List of items in player inventory
- respawn\_timer (int) Remain time for player to respawn
- position\_x (float) X coordinate of hero
- **position\_y** (float) Y coordinate of hero
- net\_worth (int) Net worth of the hero

### 3.7 get top live game()

#### Variables

Summary of a live game

- players (PlayerMinimal) List of player info
- radiant\_towers (Buildings) Radiant towers
- dire\_towers (Buildings) Dire towers
- activate\_time (int) TODO
- deactivate time (int) TODO
- server\_steam\_id (int) Steam ID of server
- lobby\_id(int) ID of lobby

- league\_id (int) Unique ID for the league of the match
- lobby\_type (int) Type of lobby
- game\_time (int) Game time
- **delay** (*int*) Stream delay (game, spectator delay)
- **spectators** (*int*) Current number of spectators
- game\_mode (int) Game mode of current game
- average\_mmr (int) Average MMR of the game
- match\_id (int) Unique ID used to identify match
- series\_id (int) Unique ID used to identify series
- radiant\_team (TeamInfo) Information about radiant team
- dire\_team (TeamInfo) Information about dire team
- sort\_score (int) TODO
- last\_update\_time (int) TODO
- radiant lead (int) Gold lead of radiant team
- radiant score (int) TODO
- dire score (int) TODO

### 3.8 get\_team\_info\_by\_team\_id()

Variables teams (list (TeamInfo)) - List of team information

### 3.9 get\_broadcaster\_info()

#### Variables

- steam\_account (SteamAccount) Steam account of broadcaster
- server\_steam\_id (int) Unique ID of game server currently being broadcasted
- live (bool) True if the user is currently broadcasting
- allow live video (bool) True if the user has allowed live video

### 3.10 get\_player\_summaries()

```
class d2api.src.wrappers.PlayerSummaries (response_text)
    get_player_summaries() response object
```

Variables players (list (SteamDetails)) - List of steam information in ascending order of account ids

class d2api.src.wrappers.SteamDetails(default\_obj={})
Information about a player as on Steam.

#### **Variables**

- steam\_account (SteamAccount) Steam account of the player
- communityvisibility (str) A string representing the access setting of the profile
- profilestate (int) Set to 1 if the user has configured their profile
- personname (str) Display name
- lastlogoff (int) Unix timestamp of when the player was last online
- **profileurl** (str) The URL to the user's steam profile
- avatar (str) URL of 32x32 image
- avatarmedium (str) URL of 64x64 image
- avatarfull (str) URL of 184x184 image
- **personastate** (str) A string representing user's status
- commentpermission (int) If present the profile allows public comments
- realname (str) The user's real name
- primaryclanid (int) The 64 bit ID of the user's primary group
- timecreated (int) A unix timestamp of the date the profile was created
- loccountrycode (int) ISO 3166 code of where the user is located
- locstatecode (int) Variable length code representing the state the user is located in
- loccityid (int) An integer ID internal to Steam representing the user's city
- gameid (int) If the user is in game this will be set to it's app ID as a string
- gameextrainfo (str) The title of the game
- gameserverip (str) The server URL given as an IP address and port number

### 3.11 Common wrappers and entities

```
class d2api.src.wrappers.TeamInfo(default_obj={})
Information about team
```

#### **Variables**

- team name (str) The team's name.
- team\_id (int) The team's unique ID.
- team\_logo (int) The UGC id for the team logo.
- **complete** (bool) Whether the players for this team are all team members.

```
class d2api.src.wrappers.AbilityInfo(default_obj={})
   Ability upgrade during game.
```

#### Variables

- ability (Ability) Ability upgraded.
- time (int) Game time at which ability was upgraded
- **level** (*int*) Level of the player at which ability was upgraded.

class d2api.src.wrappers.Buildings(default\_obj={})

Represents current state of buildings

#### Variables

- {lane}\_{position} (bool) Tower status [lane = top, mid, bot][position = 1, 2, 3] (e.g. top\_t2)
- ancient\_bot (bool) Ancient bottom tower
- ancient\_top (bool) Ancient top tower
- {lane}\_{type} (bool) Barracks status [lane = top, mid, bot][type = ranged, melee] (e.g. mid\_melee)

class d2api.src.wrappers.PlayerMinimal(default\_obj={})

A minimal information wrapper for a player

#### **Variables**

- steam\_account (SteamAccount) Steam account of player
- **side** (*str*) side to which a player belongs (radiant/dire)
- hero (Hero) hero played

class d2api.src.entities.Ability(ability\_id)

Wrapper to map ability data to ability\_id

#### Variables

- ability\_id (int) Unique identifier of ability
- ability\_name (str) Name of the ability

class d2api.src.entities.Item(item\_id)

Wrapper to map item information to item\_id

#### Variables

- item\_id (int) Unique identifier of item
- item\_cost (int) Cost of the item
- item\_aliases (list(str)) List of names by which the item is known
- item name (str) Name of the item

class d2api.src.entities.SteamAccount(account\_id)

Wrapper to implicitly store steam32 and steam64 account IDs

#### Variables

- id32 (int) 32-bit Steam ID
- id64 (int) 64-bit Steam ID

class d2api.src.entities.Hero(hero\_id)

Wrapper to map hero information to hero\_id

#### **Variables**

• hero id (int) - Unique identifier of hero

• hero\_name (str) - Name of the hero

# CHAPTER 4

**Tutorial** 

### 4.1 Getting started

#### 4.1.1 Getting an API key

First and foremost, you'll need a Steam API key. You can get one here.

#### 4.1.2 Initialize wrapper via environment variable

Create a new environment variable  $D2\_API\_KEY$  and set its value to the API key. You can then, just use the following code to initialize the wrapper.

```
api = d2api.APIWrapper()
```

#### 4.1.3 Initialize wrapper inline

Literally just initialize the wrapper inline. That's about it.

```
# overrides the environment variable key
api = d2api.APIWrapper('YOUR_API_KEY')
```

#### 4.1.4 Unparsed response

There's a good chance you'd like your responses au naturel. Just set parse\_response = False. The wrapper returns the response text as is (without using the built-in json parser).

```
api = d2api.APIWrapper(api_key = 'YOUR_API_KEY', parse_response = False)
```

**Note:** While it is highly recommended that a json response have unique key-value pairs, it is not mandatory that they be unique. Some responses of the Steam WebAPI consists of such repeated key-value pairs. Use d2api.src.util.decode\_json to parse these results to avoid losing content.

### 4.2 Examples

#### 4.2.1 Hero frequency in last 100 games

```
import d2api
from d2api.src import entities
api = d2api.APIWrapper()
# fetch latest matches
match_history = api.get_match_history()
# get frequency of heroes played in the latest 100 games
heroes = {}
for match in match_history['matches']:
    for player in match['players']:
        hero_id = player['hero']['hero_id']
        if not hero_id in heroes:
            heroes[hero_id] = 0
        heroes[hero_id] += 1
# print hero frequency by name
for hero_id, freq in heroes.items():
    print (entities.Hero (hero_id) ['hero_name'], freq)
```

#### 4.2.2 Using the API without the API

```
from d2api.src import entities

# Hero/Item/Ability information is available without having to specify a key
print(entities.Hero(67)['hero_name'])
print(entities.Item(208)['item_aliases'])
print(entities.Ability(6697)['ability_name'])

# Use steam32/steam64 IDs interchangeably
steam_account = entities.SteamAccount(1020002)
print(steam_account['id32'], steam_account['id64'])
```

#### 4.2.3 Matches without leavers

20

```
# Fetch last 100 very high skill games and filter out games that have leavers import d2api (continues on next page)
```

Chapter 4. Tutorial

(continued from previous page)

```
api = d2api.APIWrapper()
vhs = api.get_match_history(skill = 3)

matches = [api.get_match_details(m['match_id']) for m in vhs['matches']]

# now filter out matches that have leavers
matches = [m for m in matches if not m.has_leavers()]

# number of matches that remain
print(len(matches))

# print the first match
print(matches[0])
```

4.2. Examples 21

22 Chapter 4. Tutorial

# Python Module Index

### d

d2api.src.entities,17 d2api.src.wrappers,9

24 Python Module Index

# Index

A	Heroes (class in d2api.src.wrappers), 12	
Ability (class in d2api.src.entities), 17	1	
AbilityInfo (class in d2api.src.wrappers), 16	Itam (aloss in deani sra antitias) 17	
AdditionalUnit (class in d2api.src.wrappers), 11 all_items() (d2api.src.wrappers.AdditionalUnit method),	Item (class in d2api.src.entities), 17	
an_items() (dzapi.src.wrappers.AdditionarOmt method),	L	
all_items() (d2api.src.wrappers.PlayerUnit method), 11 APIWrapper (class in d2api), 5	leavers() (d2api.src.wrappers.MatchDetails method), 10 LiveGameSummary (class in d2api.src.wrappers), 14 LiveLeagueGames (class in d2api.src.wrappers), 13 LocalizedGameItem (class in d2api.src.wrappers), 12 LocalizedHero (class in d2api.src.wrappers), 12	
В		
BroadcasterInfo (class in d2api.src.wrappers), 15		
Buildings (class in d2api.src.wrappers), 17	M	
D	MatchDetails (class in d2api.src.wrappers), 9	
d2api.src.entities (module), 17	MatchHistory (class in d2api.src.wrappers), 9	
d2api.src.wrappers (module), 9	MatchSummary (class in d2api.src.wrappers), 9	
G	P	
Game (class in d2api.src.wrappers), 13 GameItems (class in d2api.src.wrappers), 12 get_broadcaster_info() (d2api.APIWrapper method), 5 get_game_items() (d2api.APIWrapper method), 5 get_heroes() (d2api.APIWrapper method), 5	PickBan (class in d2api.src.wrappers), 11 PlayerLive (class in d2api.src.wrappers), 13 PlayerMinimal (class in d2api.src.wrappers), 17 PlayerSummaries (class in d2api.src.wrappers), 15 PlayerUnit (class in d2api.src.wrappers), 10	
get_live_league_games() (d2api.APIWrapper method), 5 get_match_details() (d2api.APIWrapper method), 6	S	
get_match_history() (d2api.APIWrapper method), 6 get_match_history_by_sequence_num()	Scoreboard (class in d2api.src.wrappers), 13 SteamAccount (class in d2api.src.entities), 17 SteamDetails (class in d2api.src.wrappers), 16	
get_player_summaries() (d2api.APIWrapper method), 6 get_team_info_by_team_id() (d2api.APIWrapper	Т	
method), 7 get_top_live_game() (d2api.APIWrapper method), 7 get_tournament_prize_pool() (d2api.APIWrapper method), 7	TeamInfo (class in d2api.src.wrappers), 16 TeamInfoByTeamID (class in d2api.src.wrappers), 15 TeamLive (class in d2api.src.wrappers), 13 TopLiveGame (class in d2api.src.wrappers), 14	
Н	TournamentPrizePool (class in d2api.src.wrappers), 12	
has_leavers() (d2api.src.wrappers.MatchDetails method),	U	
10 Hero (class in d2api.src.entities), 17	update_local_data() (in module d2api), 7	
•		