Working with Categorization API

Purpose of the Categorization API

The Categorization API is designed to provide developers and third-party systems with a quick and easy way to get data from the SafeDNS database of categorized sites. The API is designed for integration with other systems where site category verification is required (filtering systems, advertising systems, etc.). The categorization API uses the standard JSON specification to process requests. The API is not intended to be accessed by end users of the integrated system. The API must be requested from an intermediate server of the integrated system.

The performance of the API is approximately 1k requests per second.

The database of categorized SafeDNS sites currently includes more than 106 million unique domains in more than 60 categories.

> In order to increase the processing speed, the data provided by the Categorization API can be cached on the side of the integrated system for a period of no more than 12 hours.

Accessing API

To access API you should use the following host: **x.api.safedns.com**

Authorization

Requesting x.api.safedns.com you need to use Basic Authorization. A special HTTP Authorization header should be passed in each request. The string `<client_id>:<client_secret>` passed in the Authorization header is encoded by the **base64** method. Herewith, the **Basic** should be specified as the authorization method.

Authorization header example:

```
Authorization: Basic
Ndc2MDE4N2Q4MWJjNGI3Nzk5NDc2YjQycjUxMDM3MTM6ZjI1YmViZjk5MWZmNDE5ODkzZGIyNTU3MjhlNGUxZGU=
```

CURL request with authorization:

```
curl  https://x.api.safedns.com/domain/www.website.com -H "Authorization: Basic AUTHORIZATION_HEADER"
```

PowerShell example with authorization:

```
Invoke-WebRequest -Uri https://x.api.safedns.com/domain/www.website.com -Headers @{ Authorization = "Basic "+ [System.Convert]::ToBase64String([System.Text.Encoding]::ASCII.GetBytes("<client_id>:<client_secret>")) }
```

Getting a list of site categories

Request:

```
GET https://x.api.safedns.com/domain/www.website.com
```

will return an answer in JSON format:

```
{
  "category": [49, 59],
  "bad": false,
  "category_name": ["Computers & Internet", "Business"]
}
```

Getting a list of URL categories

Request:

```
GET https://x.api.safedns.com/url/http://www.website.com/path/to?arg=val
```

will return an answer in JSON format:

```
{
  "category": [49, 59],
  "bad": false,
  "category_name": ["Computers & Internet", "Business"]
}
```

Getting a list of categories

Request:

```
GET https://x.api.safedns.com/catgroups
```

will return an answer in JSON format:

```
[
  {
    "Illegal Activity": {"6": "Drugs",
                         "7": "Tasteless",
                         "8": "Academic Fraud",
                        "10": "Hate & Discrimination",
                        "11": "VPN, Proxies & Anonymizers",
                        "19": "Child Sexual Abuse (IWF)",
                        "31": "German Youth Protection",
                        "65": "Child Sexual Abuse (Arachnid)"}
  },
  {
    "Adult Related": {"13": "Adult Sites",
                      "14": "Alcohol & Tobacco",
                      "15": "Dating",
                      "16": "Pornography & Sexuality",
                      "17": "Astrology",
                      "18": "Gambling"}
  },
  {
    "Bandwidth Hogs": {"24": "Photo Sharing",
                       "20": "Torrents & P2P",
                       "21": "File Storage",
                       "22": "Movies & Video",
                       "23": "Music & Radio"}
  },
  {
    "Time Wasters": {"5": "Online Ads",
                     "26": "Chats & Messengers",
                     "27": "Forums", "28": "Games",
                     "29": "Social Networks",
                     "30": "Entertainment"}
```

```
},
{
  "General Sites": {"32": "Automotive",
                    "33": "Blogs",
                    "34": "Corporate Sites",
                    "35": "E-commerce",
                    "36": "Education",
                    "37": "Finances",
                    "38": "Government",
                    "39": "Health & Fitness",
                    "40": "Humor",
                    "41": "Jobs & Career",
                    "42": "Weapons",
                    "43": "Politics, Society and Law",
                    "44": "News & Media",
                    "45": "Non-profit",
                    "46": "Portals",
                    "47": "Religious",
                    "48": "Search Engines",
                    "49": "Computers & Internet",
                    "50": "Sports",
                    "51": "Science & Technology",
                    "52": "Travel",
                    "53": "Home & Family",
                    "54": "Shopping",
                    "55": "Arts",
                    "56": "Webmail",
                    "57": "Real Estate",
                    "58": "Classifieds",
                    "59": "Business",
                    "60": "Kids",
                    "63": "Trackers & Analytics",
                    "67": "Online Libraries",
                    "72": "Generative AI",
                    "100": "Contentless Domains"}
},
{
  "Security": { "73": "DNS-tunneling",
                "1": "Newly Registered Domains",
                "3": "Malware",
```

```
                    "4": "Phishing & Typosquatting",
                    "9": "Parked Domains",
                   "12": "Botnets & C2C",
                   "66": "Cryptojacking",
                   "70": "DGA",
                   "71": "Ransomware"}
  }
]
```

Getting usage stats

Method **total_count** returns a summary of detailed stats for the requested period.

> USERNAME and TOKEN are generated separately for the stats service by SafeDNS Manager or Tech Support.

Request:

```
curl --location --request POST 'https://sdk.safedns.com/stats_x/total_count' \
--header 'Authorization: Bearer TOKEN' \
--header 'Content-Type: application/json' \
--data-raw '{
    "user": "USERNAME",
    "start_date": "2023-01-01",
    "end_date": "2023-05-31"
}'
```

will return an answer in JSON format:

```
{
"total_requests": 10600,
"billed_requests": 9600,
"categorized_domains": 5600,
"nx_domains": 4000,
"unknown_domains": 910,
"bad_requests": 90
}
```

Method **detailed_count** returns detailed stats for the each day of the requested period.
USERNAME and TOKEN are generated separately for the stats service by SafeDNS Manager or Tech

Support.

Request:

```
curl --location --request POST 'https://sdk.safedns.com/stats_x/detailed_count' \
--header 'Authorization: Bearer TOKEN' \
--header 'Content-Type: application/json' \
--data-raw '{
    "user": "USERNAME",
    "start_date": "2023-01-01",
    "end_date": "2023-05-31"
}'
```

will return an answer in JSON format:

```
{
"2023-01-01": {
               "total_requests": 10600,
               "billed_requests": 9600,
               "categorized_domains": 5600,
               "nx_domains": 4000,
               "unknown_domains": 910,
               "bad_requests": 90
              },
"2023-01-02": {"total_requests": 22600,
               "billed_requests": 21600,
               "categorized_domains": 15000,
               "nx_domains": 6600,
               "unknown_domains": 130,
               "bad_requests": 870
              },
"2023-01-03": {...},
}
```

Responses

If a domain is categorized, API returns code 200, category name and its number.

```
curl --user <client_id>:<client_secret> https://x.api.safedns.com/domain/safedns.com
```

```
StatusCode        : 200
StatusDescription : OK
Content           : {"category": [49], "bad": false, "category_name": ["Computers &
Internet"]}
```

If a domain does not exist, API returns code 206, category 0 and non-existing domain.

```
curl --user <client_id>:<client_secret> https://x.api.safedns.com/domain/does.not.exist
```

```
StatusCode        : 206
StatusDescription : Partial Content
Content           : {"category": [0], "bad": false, "category_name": ["Non-Existing Domain"]}
```

If a domain is not categorized, API returns code 404 without JSON.

```
curl --user <client_id>:<client_secret> https://x.api.safedns.com/domain/com
```

```
curl : The remote server returned an error: (404) Not Found.
```

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