

# CONNECTION BETWEEN HASOFFERS AND GOOGLE DRIVE API

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**Annotation.** *In this project I created a connection between 2 systems by using their API and JavaScript language. In computer programming, an application programming interface (API) is a set of subroutine definitions, protocols, and tools for building application software. In HasOffers API allows me to retrieve and send information relating to the workflow of the advertising campaigns that are being run by publishers. In google Drive I used the spreadsheets part to store and share the data I exported from HasOffers.*

**Keywords.** *API, AJAX, JSON, HTTPS.*

## How does it work?

The project performs the following steps when doing its tasks

1. Generating https request, depending on the user input
2. Sending http request to HasOffers server via AJAX (Asynchronous JavaScript and XML) requests
3. Retrieving response from HasOffers in form of JSON object
4. Parsing JSON object
5. Information processing
6. Sending information to Google Drive

## Why did I choose these systems?

The HasOffers system is included in top 2 list of the traffic handling systems; it has a responsive interface, strong logic connection between system components, big knowledge base, 24h support.



Pic. 1. HasOffers logo

The Google Drive is another great choice for a system to work with. Mainly because of the ability for many people to work on the same file from different computers. Google Drive is a top 1 online office system by amount of users using it, and it got strong technical support just like HasOffers.

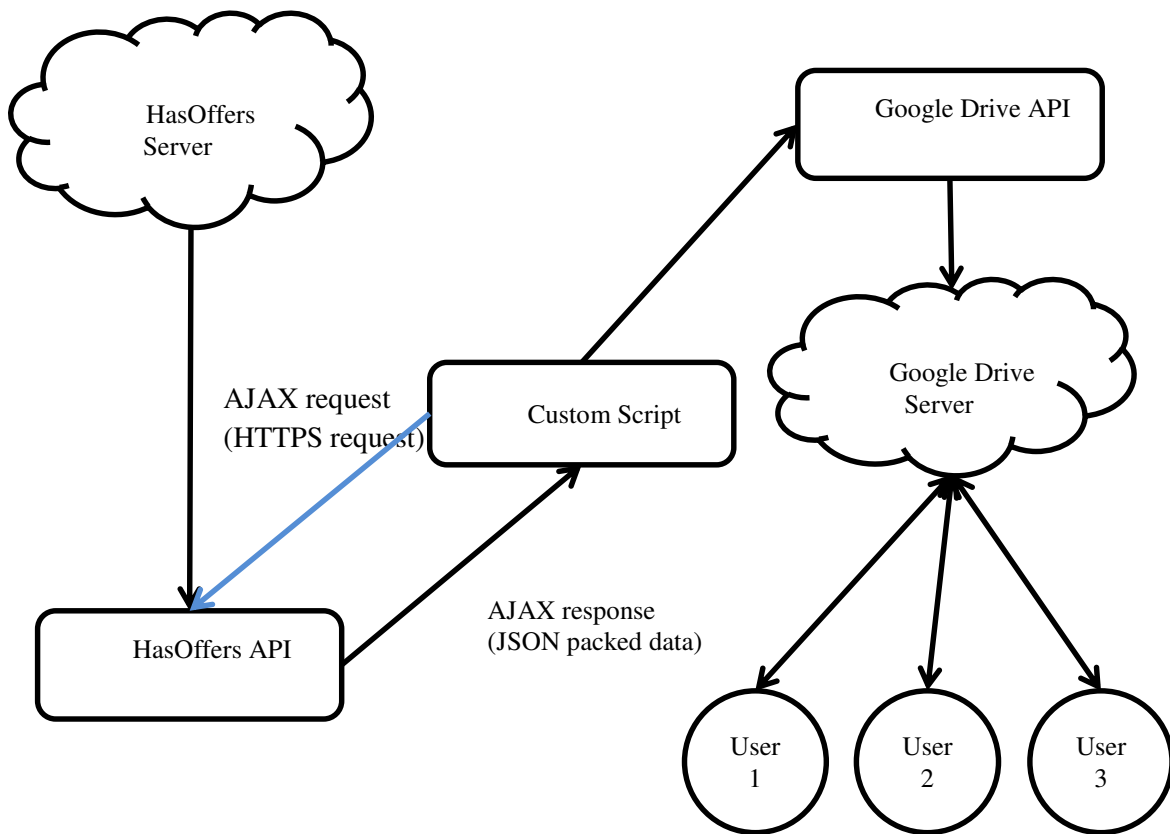


Pic. 2. Google Drive logo

## What are the security measures?

The API can often be a risk factor for a system, since programs don't use standard authentication systems used by people. HasOffers has 5 level protections when making API requests:

1. Each advertising network has to have own subdomain. This way you can't make a request to another network and get their data.
2. Each request to the server must contain a Network Token and API key of the network it's used with.
3. Each request has an IP address filtering, which allows only specific list of computers or offices to be connected to the system.
4. The requests are made using https protocol.
5. HasOffers has log files and backup services which will allow quickly detecting the problem and solving the damage, if there was any.



Pic 3. System functioning scheme

Google Drive security system is built differently and needs just 4 steps as the security measure.

1. The API key needs to be in each request
2. Each request requires user authentication
3. Only specific domains are allowed to make the requests
4. And, of course, requests are made using https protocol.

**What is in the code?**

Ajax Code sample

```
function loadDoc() {
  var xhttp = new XMLHttpRequest();
  xhttp.onreadystatechange = function() {
    if (this.readyState == 4 && this.status == 200) {
      document.getElementById("demo").innerHTML = this.responseText;
    }
  };
  xhttp.open("GET", "ajax_info.txt", true);
  xhttp.send();
}
```

Hasoffers API code Sample

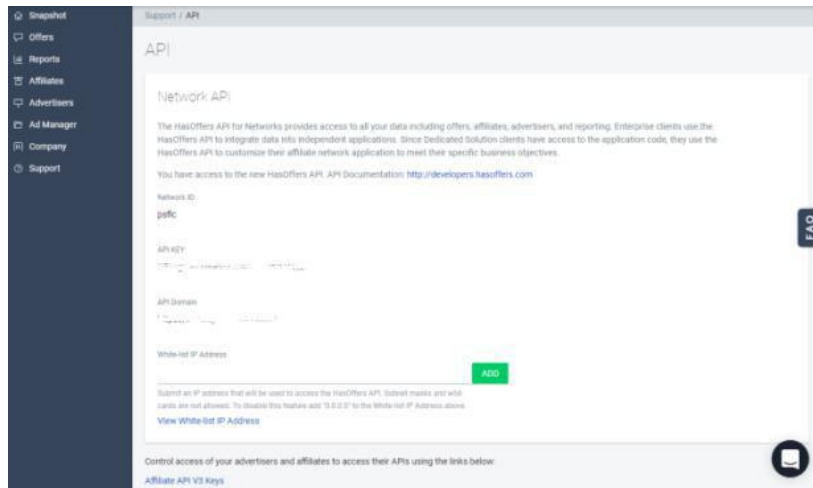
```
https://custom_domain.api.hasoffers.com
/Api3/json?NetworkToken=NET_TOKEN&Target=Report&Method=getStats&fields[]=Affiliate.company
&fields[]=Stat.payout&groups[]=Affiliate.company&filters[Stat.payout][conditional]=GREATER_THAN
&filters[Stat.payout][values]=0&limit=1000&data_start=2017-12-01&data_end=2017-12-31"
```

**How do I control it?**

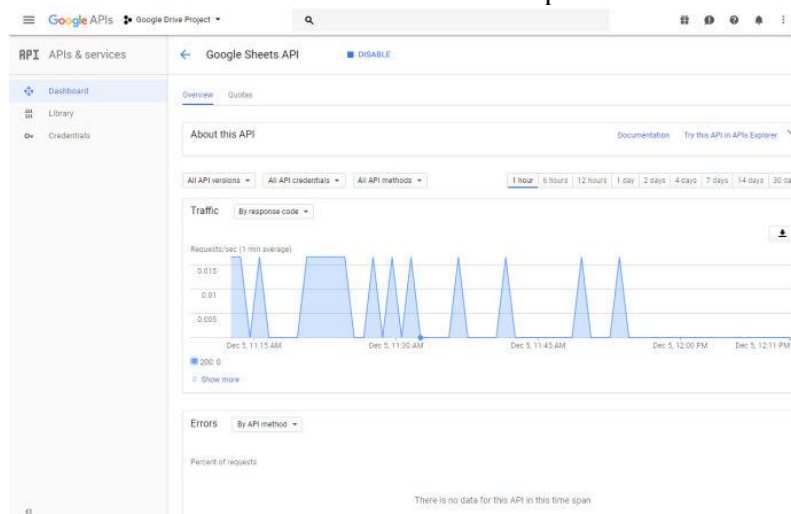
These 2 pages provide extensive access to API, it's features and settings

<http://psflc.hasoffers.com/admin/support/api>

<https://console.developers.google.com/apis/api/sheets.googleapis.com/overview>



Pic. 4. HasOffers API control panel



Pic. 5. Google Drive API control panel

### What are the advantages of using it?

The script – which connects these 2 systems, does a great job of saving time. HasOffers can't be redesigned on advertiser request, but reports can be redesigned easily by developers. It can work on large amounts of information and works great for companies which work on the distance.

### Where is script kept and how to modify it?

The script is launched from a custom domain. Files are located on VPS and can be updated any time by FTP protocol or through GIT system.

### Conclusions

Project "Connection between HasOffers and Google Drive API" is a great example of automatization using computer programming. It saves a lot of time for company's workers, allows better statistical analysis and enhances the flexibility of the system overall.

### Bibliography

1. <https://developers.tune.com> - library with documentation regarding HasOffers system.
2. <https://developers.google.com> - library with documentation regarding HasOffers system.
3. <https://www.w3schools.com/js/> - library with JavaScript documentation.