


How to perform OAuth 2.0 using the Curl CLI?

Asked 6 years, 5 months ago Modified 5 years, 1 month ago Viewed 95k times  Part of [Google Cloud](#) Collective

▲ I would like to use curl from a Windows command prompt to perform Google OAuth 2.0. My goal is to better understand the authentication flows that an OAuth server implements, see the HTTP headers, etc.

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▼ How can this be done using curl.exe from a Windows Command Prompt?



curl

oauth-2.0

google-cloud-platform

google-oauth



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asked Nov 18, 2018 at 3:53



[John Hanley](#)

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1 Answer

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▲ How to perform OAuth 2.0 using the Curl CLI?

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▼ This answer is for Windows Command Prompt users but should be easily adaptable to Linux and Mac also.



You will need your Google `Client ID` and `Client Secret`. These can be obtained from the Google Console under `APIs & Services` -> `Credentials`.



In the following example, the Scope is `cloud-platform`. Modify to use the scopes that you want to test with. Here are a few scopes that you can test with:

```
"https://www.googleapis.com/auth/cloud-platform"
"https://www.googleapis.com/auth/cloud-platform.read-only"
"https://www.googleapis.com/auth/devstorage.full_control"
"https://www.googleapis.com/auth/devstorage.read_write"
"https://www.googleapis.com/auth/devstorage.read_only"
"https://www.googleapis.com/auth/bigquery"
"https://www.googleapis.com/auth/datastore"
```

[OAuth 2.0 Scopes for Google APIs](#)

Details:

- Copy the following statements to a Windows batch file.

- Modify to fit your environment.
- Modify the script for the browser that you want to use.
- Run the batch file.
- A browser will be launched.
- The browser will go to <https://accounts.google.com> where you can complete the Google OAuth 2.0 authentication.
- Once complete a code will be displayed in the browser window.
- Copy this code (control-c) from the browser window and paste into the command prompt window (control-rightclick).
- The script will complete the OAuth 2.0 code exchange for a Token.
- The Token will be displayed in the command prompt.
- The returned Token contains an Access Token that can be used in more curl commands.

Windows Batch Script:

```
set CLIENT_ID=Replace_with_your_Client_ID
set CLIENT_SECRET=Replace_with_your_Client_Secret
set SCOPE=https://www.googleapis.com/auth/cloud-platform
set ENDPOINT=https://accounts.google.com/o/oauth2/v2/auth

set URL="%ENDPOINT%?
client_id=%CLIENT_ID%&response_type=code&scope=%SCOPE%&access_type=offline&redirect_uri=

@REM start iexplore %URL%
@REM start microsoft-edge:%URL%
start chrome %URL%

set /p AUTH_CODE="Enter Code displayed in browser: "

curl ^
--data client_id=%CLIENT_ID% ^
--data client_secret=%CLIENT_SECRET% ^
--data code=%AUTH_CODE% ^
--data redirect_uri=urn:ietf:wg:oauth:2.0:oob ^
--data grant_type=authorization_code ^
https://www.googleapis.com/oauth2/v4/token
```

The final output looks like this:

```
{
  "access_token": "ya29.deleted_for_security_reasons",
  "expires_in": 3600,
  "refresh_token": "1/jk3/deleted_for_security_reasons",
  "scope": "https://www.googleapis.com/auth/cloud-platform",
  "token_type": "Bearer"
}
```

Example curl command using Access Token:

```
set ACCESS_TOKEN=replace_with_your_access_token
set PROJECT=development-123456
set ZONE=us-west-1a
set INSTANCE_NAME=dev-system

@REM - This endpoint will start the instance named INSTANCE_NAME in ZONE
set
ENDPOINT=https://www.googleapis.com/compute/v1/projects/%PROJECT%/zones/%ZONE%/instances

curl -H "Authorization: Bearer %ACCESS_TOKEN" "%ENDPOINT%"
```

Tip: Save the Access Token to a file

Modify the last line of the batch script to use `jq` to process the output:

```
curl ^
--data client_id=%CLIENT_ID% ^
--data client_secret=%CLIENT_SECRET% ^
--data code=%AUTH_CODE% ^
--data redirect_uri=urn:ietf:wg:oauth:2.0:oob ^
--data grant_type=authorization_code ^
https://www.googleapis.com/oauth2/v4/token | jq -r ".access_token > token.save

set /p ACCESS_TOKEN=<token.save
echo %ACCESS_TOKEN%
```

The last two lines show how to read the Access Token that was saved to a file for further use in more scripts.

Remember, Tokens expire after 60 minutes which is the default value.

I wrote an article detailing this on my blog:

[Google OAuth 2.0 – Testing with Curl](#)

[Update 3/18/2020]

I write an article on how to perform OAuth in Powershell. This article shows how to do OAuth, save and refresh tokens and then impersonate a service account.

[PowerShell – Impersonate Google Service Account](#)

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edited Mar 19, 2020 at 4:06

answered Nov 18, 2018 at 3:53




John Hanley

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Request: would you post an example of sending a cURL smtp message with OAuth2 though gmail? – [Todd](#)
Mar 19, 2020 at 1:57

@Todd - Create a new question and let me know the link. – [John Hanley](#) Mar 19, 2020 at 4:02

Hi John, to answer the question you posed to me, I have created stackoverflow.com/questions/60736238/... – [Todd](#) Mar 20, 2020 at 22:34

@JohnHanley is there any way to get the code displayed in the browser automatically without entering it manually? – [s.ouchene](#) Sep 19, 2021 at 17:19 

@s.ouchene - On my website are articles about how to use OAuth with curl. I also provide a mini webserver in Python to handle code exchanges. The source is also on GitHub: github.com/jhanley-com/google-oauth-2-0-testing-with-curl – [John Hanley](#) Sep 19, 2021 at 17:34

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