

Project id: cdsds561-project-1

Bucket Name: hw2nirbhgsutil

Directory Name: test-dir

Github Link : [CDS-DS-561-hw2/HW3-Folder at master · nirbhay221/CDS-DS-561-hw2 \(github.com\)](https://github.com/nirbhay221/CDS-DS-561-hw2)

Service Account email for pub sub:

pubsubserviceacc-hw3-nirbh@cdsds561-project-1.iam.gserviceaccount.com

Service Account for pub sub: pubsubServiceAcc-hw3-nirbh

First, after creating the first application that is a cloud function that is capable of accepting HTTP-GET requests from web clients, we check if the following application responds for the files in my bucket “hw2nirbhgsutil” that I created in homework 2 and returns the contents of the requested file along with the 200-OK status.

For the following we first deploy the following application using the following commands:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf>gcloud functions deploy python-http-function --gen2 --runtime=python311 --region=us-east1 --source=. --entry-point=get_file --trigger-http --allow-unauthenticated --memory 200MB
Preparing execution environment...
OK Deploying function...
OK [Build] Logs are available at [https://console.cloud.google.com/cloud-build/builds;region=us-east1/fd22c3b5-36b0-4b9e-9ef5-b91ed766cc5a
    ->project=494559990174]
OK [Service]
  - [ArtifactRegistry]
  - [Healthcheck]
  - [Triggercheck]
Done.
You can view your function in the Cloud Console here: https://console.cloud.google.com/functions/details/us-east1/python-http-function?project=cdsds561-project-1

buildConfig:
build: projects/494559990174/locations/us-east1/builds/fd22c3b5-36b0-4b9e-9ef5-b91ed766cc5a
dockerRegistry: ARTIFACT_REGISTRY
entryPoint: get_file
runtime: python311
source:
storageSource:
  bucket: gcf-v2-sources-494559990174-us-east1
  generation: '1696541538038394'
  object: python-http-function/function-source.zip
sourceProvenance:
resolvedStorageSource:
  bucket: gcf-v2-sources-494559990174-us-east1
  generation: '1696541538038394'
  object: python-http-function/function-source.zip
environment: GEN_2
labels:
deployment-tool: cli-gcloud
name: projects/cdsds561-project-1/locations/us-east1/functions/python-http-function
service:
allTrafficOnLatestRevision: true
availableCpu: '0.166'
availableMemory: 200M
ingressSettings: ALLOW_ALL
maxInstanceCount: 100
maxInstanceRequestConcurrency: 1
revision: python-http-function-00001-dod
service: projects/cdsds561-project-1/locations/us-east1/services/python-http-function
serviceAccountEmail: 494559990174-compute@developer.gserviceaccount.com
timeoutSeconds: 60
uri: https://python-http-function-yrtp6yfcmp-ue.a.run.app
state: ACTIVE
updateTime: '2023-10-05T21:33:24.210125566Z'
url: https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function
```

An easier way of doing the following would be to create a bat file like the following:

I created the following bat file with the following command inside it and used the following bat file for deploying the following google cloud function.

Bat File:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>cat pleasework.bat
gcloud functions deploy python-http-function ^
--gen2 ^
--runtime=python311 ^
--region=us-east1 ^
--source=. ^
--entry-point=get_file ^
--trigger-http ^
--allow-unauthenticated ^
--memory 200MB
```

Implementing the following bat file:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>gcloud functions deploy python-http-function --gen2 --runtime=python311 --region=us-east1 --source=. --entry-point=get_file --trigger-http --allow-unauthenticated --memory 200MB
Preparing function...done.
X Updating function (this may take a while)...
OK [Build logs are available at https://console.cloud.google.com/cloud-build/builds;region=us-east1/fe85b51-36f5-48c2-a860-37a0336ea3c1?project=494545999074]
[Service]
  . [ArtifactRegistry]
  . [CloudBuild]
  . [TriggerCloud]
Completed with warnings:
[INFO] A new version will be deployed serving with 100% traffic.
You can view your function in the Cloud Console here: https://console.cloud.google.com/functions/details/us-east1/python-http-function?project=cddsd561-project-1
buildConfig:
  build: projects/cddsd561-project-1/locations/us-east1/builds/fe85b51-36f5-48c2-a860-37a0336ea3c1
  deploymentIdentity: ARTIFACT_REGISTRY
  entryPoint: get_file
  runtime: python311
  source:
    storageSource:
      bucket: gcf-v2-sources-4945459990174-us-east1
      generation: '1696783930272817'
    project: python-http-function/function-source.zip
  sourceVersion:
    resolvedStorageSource:
      bucket: gcf-v2-sources-4945459990174-us-east1
      generation: '1696783930272817'
      object: python-http-function/function-source.zip
environment: GEN_2
labels:
  deployment-tool: cli-gcloud
name: projects/cddsd561-project-1/locations/us-east1/functions/python-http-function
serviceConfig:
  allowUnauthenticatedRevision: true
  availableCpu: '0.1666'
  availableMemory: 2000
  ingressSettings: ALLOW_ALL
  maxConcurrentRequests: 1
  maxInstanceRequestConcurrency: 1
  revision: python-http-function-00843-g1r
  service: projects/cddsd561-project-1/locations/us-east1/services/python-http-function
  serviceAccount: '4945459990174-compute@developer.gserviceaccount.com'
  timeoutSeconds: 60
  url: https://python-http-function-yrtpdyfcmu-ue.a.run.app
state: ACTIVE
updateTime: '2023-10-08T16:53:04.652Z'
url: https://us-east1-cddsd561-project-1.cloudfunctions.net/python-http-function
```

After deploying the function we can check the browser for accessing the files from the directory in the bucket and for examining the several other response status cases.

You can also check the url of the following cloud function using the describe command:

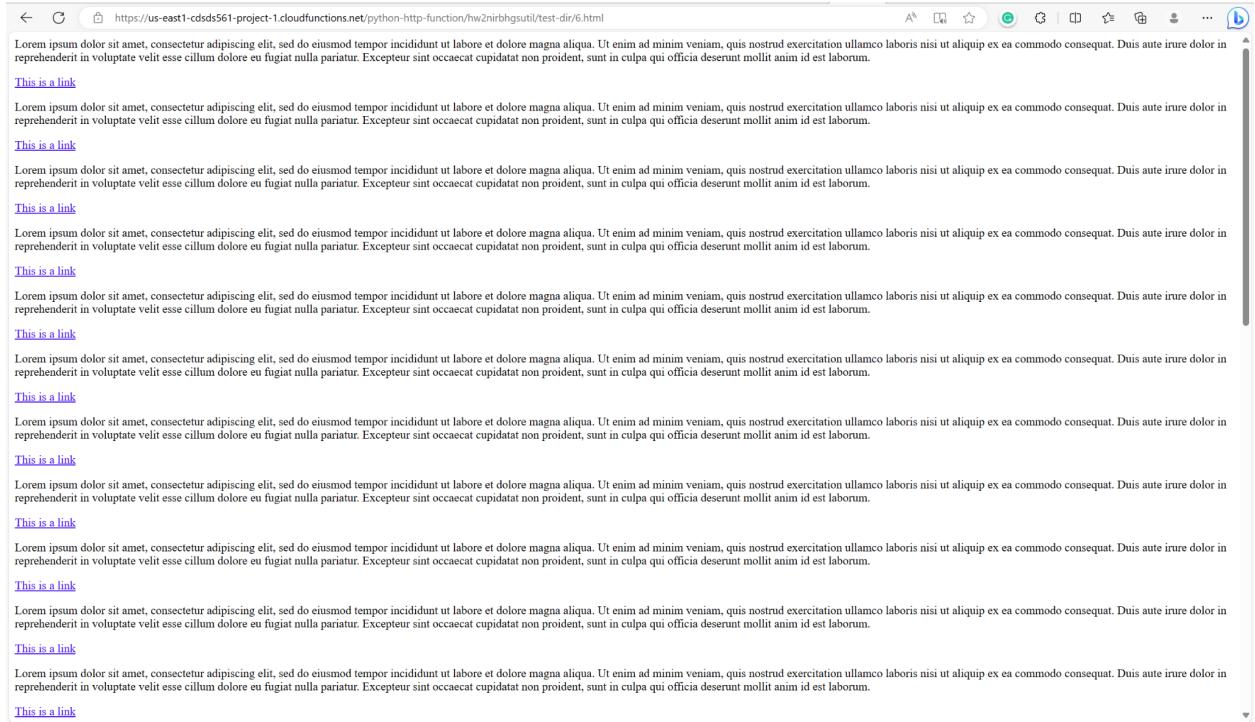
```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>gcloud functions describe python-http-function --region us-east1
buildConfig:
  build: projects/494559990174/locations/us-east1/builds/5aa7c7e5-a56d-4a9c-b3fd-ad434bd039d1
  dockerRegistry: ARTIFACT_REGISTRY
  entryPoint: get_file
  runtime: python311
  source:
    storageSource:
      bucket: gcf-v2-sources-494559990174-us-east1
      generation: '1696921448441786'
      object: python-http-function/function-source.zip
  sourceProvenance:
    resolvedStorageSource:
      bucket: gcf-v2-sources-494559990174-us-east1
      generation: '1696921448441786'
      object: python-http-function/function-source.zip
environment: GEN_2
labels:
  deployment-tool: cli-gcloud
name: projects/cdsds561-project-1/locations/us-east1/functions/python-http-function
serviceConfig:
  allTrafficOnLatestRevision: true
  availableCpu: '0.1666'
  availableMemory: 200M
  ingressSettings: ALLOW_ALL
  maxInstanceCount: 100
  maxInstanceRequestConcurrency: 1
  revision: python-http-function-00006-jax
  service: projects/cdsds561-project-1/locations/us-east1/services/python-http-function
  serviceAccountEmail: 494559990174-compute@developer.gserviceaccount.com
  timeoutSeconds: 60
  uri: https://python-http-function-yrt6yfcmq-ue.a.run.app
state: ACTIVE
updateTime: '2023-10-10T07:04:51.813998685Z'
url: https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>
```

From the following you can get the URL which is the uri in the above image.

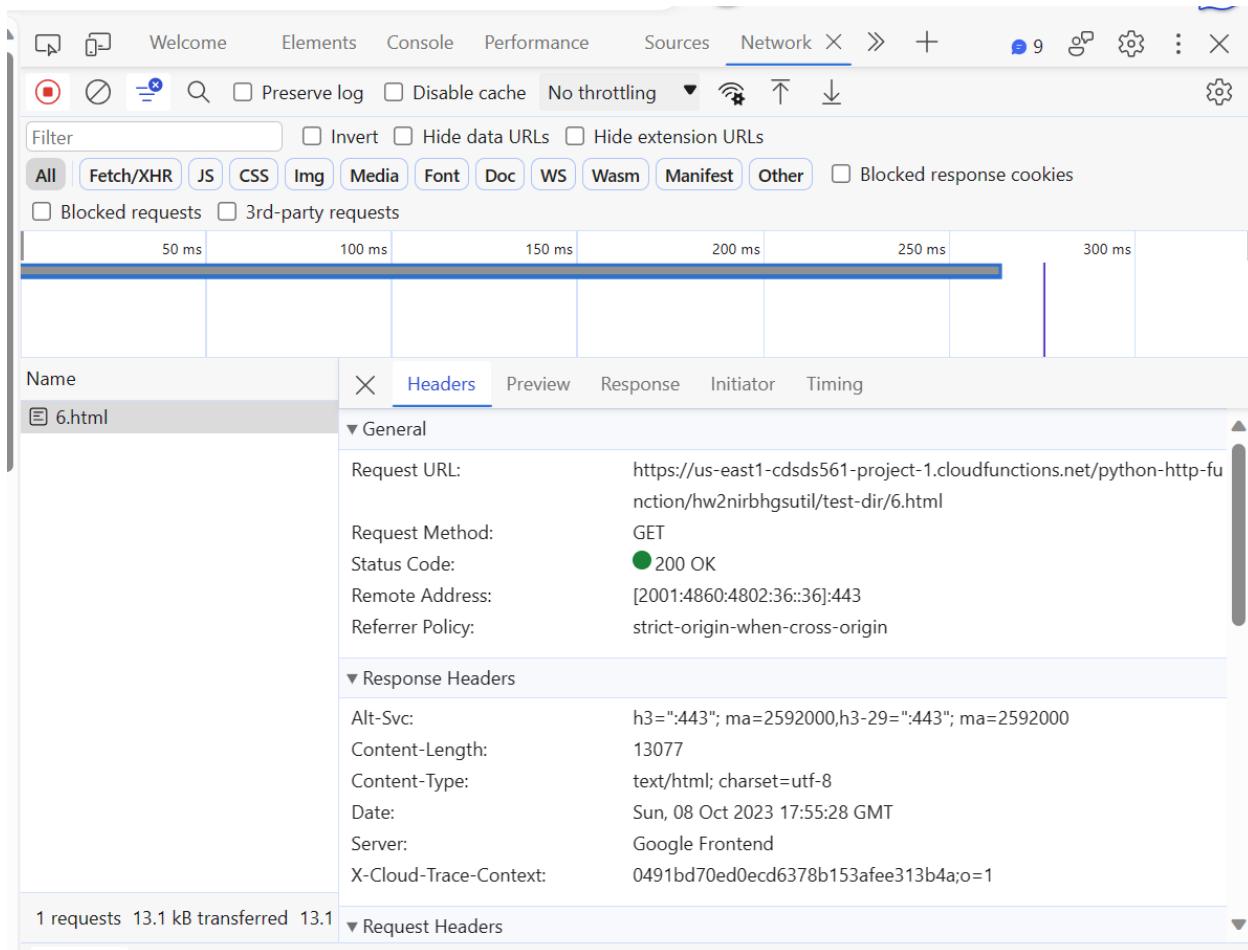
Checking Browser:

First we can check the browser by sending the get request for extracting the files from the directory in the bucket and check if we get the 200-OK status.

Command to use for accessing the file from the directory in the bucket using the google cloud function :



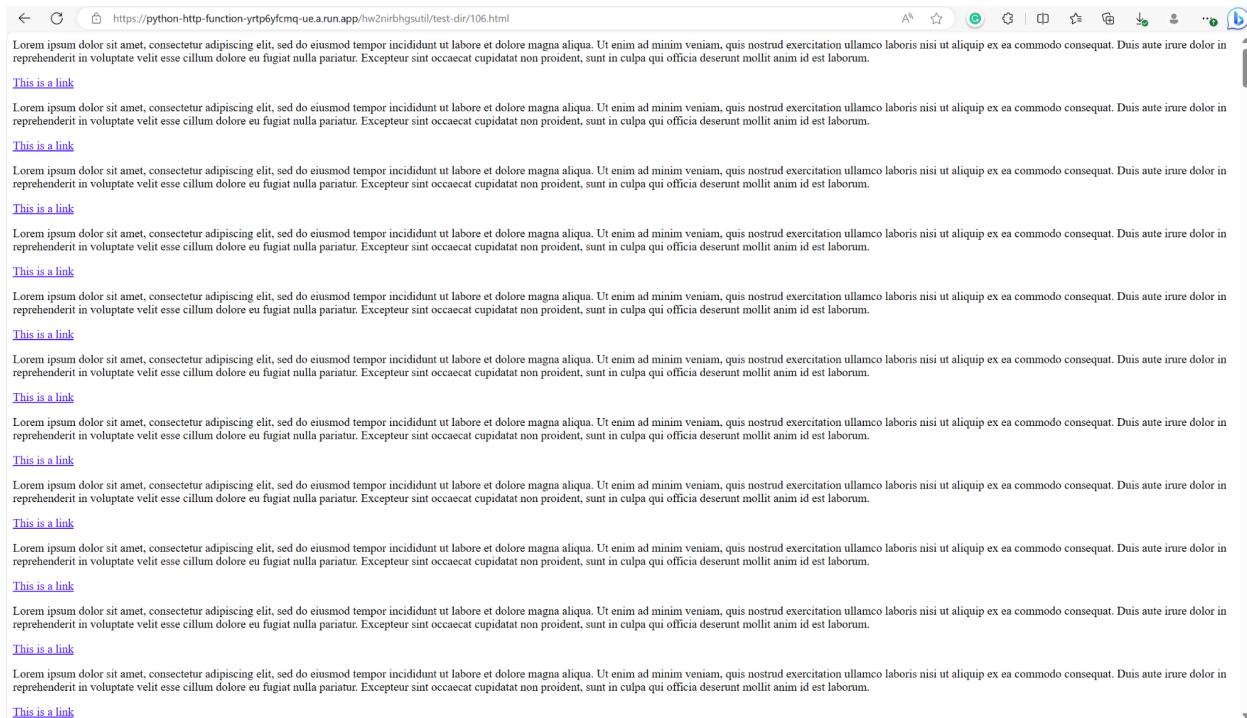
Now we can check the 200-OK status for the following request from the network section:



Instruction : For forming the url for extracting the file, we can form it using :
{url_provided_by_google_cloud_function}/{bucket_name}/{directory_name}/{file_name}

Other than this when you use the url provided by the describe function you will get the same result.

Browser Search :



Browser Request Status:

The screenshot shows the Network tab in the Chrome DevTools. A single request for '106.html' is listed. The 'Headers' tab is selected, displaying the following details:

Request URL	https://python-http-function-yrtpp6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
Request Method	GET
Status Code	200 OK
Remote Address	[2001:4860:4802:36::35]:443
Referrer Policy	strict-origin-when-cross-origin
Alt-Svc	h3=":443"; ma=2592000,h3-29=":443"; ma=2592000
Content-Length	93723
Content-Type	text/html; charset=utf-8
Date	Tue, 10 Oct 2023 16:34:28 GMT
Server	Google Frontend
X-Cloud-Trace-Context	f61af75c9c4920a577e2946a764348eb;o=1

At the bottom left, it says '1 requests 93.8 kB transferred 93.7'. The 'Request Headers' section is collapsed.

Now for checking the file not found status we can choose a file name that is above 10,000 and then try accessing the following file. We can use the following command to check for the file not found case :

The screenshot shows a browser window with the URL <https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function-hw2nirbhgsutil/test-dir/100006.html>. The page content is 'File "test-dir/100006.html" not found.'

Now we can check file not found error status:

The screenshot shows the Network tab in the Chrome DevTools. A single request for '100006.html' is listed, which failed with a 404 Not Found status code. The request URL is <https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/100006.html>. The response headers include Alt-Svc, Content-Length (38), Content-Type (text/html; charset=utf-8), Date (Sun, 08 Oct 2023 18:08:37 GMT), Server (Google Frontend), and X-Cloud-Trace-Context (24ca621ffbd68a29a24acd00033a6e21;o=1).

Name	Request URL	Status Code	Remote Address	Referrer Policy
100006.html	https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/100006.html	404 Not Found	[2001:4860:4802:36::36]:443	strict-origin-when-cross-origin

Other than this when you use the url provided by the describe function you will get the same result.

Browser Search and Browser Request Status :

The screenshot shows the browser search results for 'test-dir/100006.html' and the Network tab in the Chrome DevTools. The search results page shows a 404 Not Found error. The Network tab shows a successful request for '100006.html' with a 200 OK status code. The request URL is <https://python-http-function-yrtpfyfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/100006.html>. The response headers are identical to the failed request in the previous screenshot.

Name	Request URL	Status Code	Remote Address	Referrer Policy
100006.html	https://python-http-function-yrtpfyfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/100006.html	200 OK	[2001:4860:4802:36::35]:443	strict-origin-when-cross-origin

Now, we can check other request case scenarios:

We can use firefox for checking other request scenarios like POST, UPDATE, DELETE, OPTIONS, TRACE, HEAD, CONNECT, TRACE, PATCH.

POST REQUEST:

For checking the POST request, we can use the network section on Firefox and type in the URL and specify the POST request and then click on the send button:

The screenshot shows the Network tab in the Chrome DevTools interface. The tab is highlighted with a blue underline. At the top, there are tabs for Inspector, Console, Debugger, Network (which is active), Style Editor, and Performance. Below the tabs, there is a toolbar with a trash can icon, a filter icon, and a search bar. The main area is divided into sections: 'New Request', 'Search', and 'Blocking'. The 'New Request' section shows a POST method and a long URL starting with <https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsut...>. Below this, there are sections for 'URL Parameters' and 'Headers', each containing a table with a single row. In both tables, the first column has a checked checkbox labeled 'name' and the second column has an empty 'value' field. There is also a 'Body' section containing the word 'payload'. At the bottom right of the main area, there are 'Clear' and 'Send' buttons.

And then we can check of the response status and the header that we get for the following POST request:

The screenshot shows the NetworkMiner interface with a single captured request. The request is a POST to <https://us-east1-cdd561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html>. The response status is 501 Method not implemented. The response body contains the text "Method not implemented."

Now we can also check the response:

The screenshot shows the NetworkMiner interface with a single captured request. The request is a POST to <https://us-east1-cdd561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html>. The response status is 501 Method not implemented. The response body contains the text "Method not implemented."

Other than this when you use the url provided by the describe function you will get the same result.

Browser Search and Browser Response Header Status :

The screenshot shows the NetworkMiner interface with three captured requests. The first is a GET to <https://python-http-function-ytp6yfcmq-ue.a.run.app/>. The second is a GET to <https://python-http-function-ytp6yfcmq-ue.a.run.app/favicon.ico>. The third is a POST to <https://python-http-function-ytp6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html>. The response status for the POST request is 501 Method not implemented. The response body contains the text "Method not implemented."

Browser Search and Browser Response Status :

The screenshot shows the Firefox Developer Tools Network tab. A POST request is being made to the URL https://python-http-function-yrtpelyfmc-ue.a.run.app/hw2nrbhsgutl/test-dir/106.html. The response status is 501 Method not implemented. The Network tab displays three requests: a GET for 106.html (status 200), a GET for favicon.ico (status 200), and the POST request (status 501). The Headers, Cookies, Request, Response, Timings, Stack Trace, and Security tabs are visible at the top.

PUT REQUEST:

For checking the PUT request, we can use the network section on Firefox and type in the URL (same URL as we are trying to access the file in the directory of the bucket) and specify the PUT request and then click on the send button:

The screenshot shows the Firefox Developer Tools Network tab. A PUT request is being made to the URL https://us-east1-0d5d561-project-1.cloudfunctions.net/python-http-function-hw2nrbhsgutl/test-dir/106.html. The response status is 501 Method not implemented. The Network tab displays three requests: a GET for 100006.html (status 200), a GET for favicon.ico (status 200), and the PUT request (status 501). The Headers, Cookies, Request, Response, Timings, Stack Trace, and Security tabs are visible at the top.

And then we can check of the response status and header that we get for the following PUT request:

The screenshot shows the Network tab in Chrome DevTools. A PUT request to `https://us-east1-cdd561-project-1.cloudfunctions.net/python-http-function/fw2mrhgbgut1/test-d/ir/106.html` was made with a status of 200 OK. The response headers include:

- Status: 200
- Version: HTTP/2
- Transferred: 278 B (23 B size)
- DNS Resolution: DNS over HTTPS

The Response Headers section shows:

- alt-svc: h3-2443 ma=2592000 h3-29-^A433; ma=2592000
- content-length: 23
- content-type: text/html; charset=utf-8
- date: Sun, 08 Oct 2023 18:40:08 GMT
- server: Google Frontend
- x-cloud-trace-context: 707328ed9c506edc21569e9174447e05;o=1

The Request Headers section shows:

- Accept: */*
- Accept-Encoding: gzip, deflate, br
- Accept-Language: en-US,en;q=0.5
- Cache-Control: no-cache
- Connection: keep-alive
- Content-Length: 0
- Host: us-east1-cdd561-project-1.cloudfunctions.net
- Origin: https://us-east1-cdd561-project-1.cloudfunctions.net
- Pragma: no-cache
- Sec-Fetch-Dest: empty

Now we can also check the response:

The screenshot shows the Network tab in Chrome DevTools. A PUT request to `https://us-east1-cdd561-project-1.cloudfunctions.net/python-http-function/fw2mrhgbgut1/test-d/ir/106.html` was made with a status of 501 Method not implemented. The response body contains the text "Method not implemented."

Other than this when you use the url provided by the describe function you will get the same result.

Browser Search and Browser Header Response Status: :

The screenshot shows the Network tab in Firefox Developer Tools. A PUT request is being made to the URL https://python-http-function-yrtpl6ycmq-ue.a.run.app/hw2nirbhgsutl/test-dir/106.html. The response status is 501 Method not implemented. The Headers section shows the following:

```

Status: 501
Version: HTTP/2
Transferred: 274 B (23 B size)
DNS Resolution: DNS over HTTPS

```

The Response Headers section shows:

```

Content-Type: application/json; charset=UTF-8
Content-Length: 23
Date: Tue, 10 Oct 2023 16:45:58 GMT
Server: Google Frontend
X-Cloud-Trace-Context: b518400b204e6482b0ae930e86dd01

```

The Request Headers section shows:

```

Accept: */*
Accept-Encoding: gzip, deflate, br
Accept-Language: en-US,en;q=0.5
Cache-Control: no-cache
Connection: keep-alive
Content-Length: 0
Host: python-http-function-yrtpl6ycmq-ue.a.run.app
Origin: https://python-http-function-yrtpl6ycmq-ue.a.run.app
Pragma: no-cache
Sec-Fetch-Dest: empty
Sec-Fetch-Mode: no-cors
Sec-Fetch-Site: same-origin
TE: trailers
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:109.0) Gecko/20100101 Firefox/118.0

```

Browser Response Status:

The screenshot shows the Network tab in Firefox Developer Tools. A PUT request is being made to the URL https://python-http-function-yrtpl6ycmq-ue.a.run.app/hw2nirbhgsutl/test-dir/106.html. The response status is 501 Method not implemented. The Headers section shows the following:

```

Status: 501
Version: HTTP/2
Transferred: 96 B
Method not implemented.

```

DELETE REQUEST

For checking the DELETE request, we can use the network section on Firefox and type in the URL (same URL as we are trying to access the file in the directory of the bucket) and specify the DELETE request and then click on the send button:

New Request

Search Blocking

	Status	Met...	Domain	File	Initiator	Type	Transferred	Size
DELETE 🔍 https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsut...	404	GET	us-east1...	100006.html	document	html	293 B (raced)	38 B
URL Parameters	404	GET	us-east1...	favicon.ico	FaviconLoad...	html	cached	272 B
Headers	501	DEL...	us-east1...	106.html	NetUtil.sys...	html	274 B	23 B
Body								
payload								

Clear Send

3 requests | 333 B / 567 B transferred | Finish: 4.56 s | DOMContentLoaded: 3.04 s | load: 3.04 s

And then we can check of the response status that we get for the following DELETE request:

New Request

Search Blocking

	Status	Met...	Domain	File	Initiator	Type	Transferred	Size
DELETE 🔍 https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsut...	404	GET	us-east1...	100006.html	document	html	293 B (raced)	38 B
URL Parameters	404	GET	us-east1...	favicon.ico	FaviconLoad...	html	cached	272 B
Headers	501	DEL...	us-east1...	106.html	NetUtil.sys...	html	274 B	23 B
Body								
payload								

Headers

Body

Clear Send

3 requests | 333 B / 567 B transferred | Finish: 4.56 s | DOMContentLoaded: 3.04 s | load: 3.04 s

Status: 501

Version: HTTP/3

Transferred: 274 B (23 B size)

DNS Resolution: DNS over HTTPS

Response Headers (251 B)

- alt-svc: h3="443"; ma=2592000; h3-29="443"; ma=2592000
- content-length: 23
- content-type: text/html; charset: utf-8
- date: Sun, 08 Oct 2023 19:05:08 GMT
- server: Google Frontend
- x-cloud-trace-context: 9e177643108d300ef3844ba405b5270

Request Headers (512 B)

- Accept: */*
- Accept-Encoding: gzip, deflate, br
- Accept-Language: en-US,en;q=0.5
- Cache-Control: no-cache
- Connection: keep-alive
- Host: us-east1-cdsds561-project-1.cloudfunctions.net
- Origin: https://us-east1-cdsds561-project-1.cloudfunctions.net
- Pragma: no-cache
- Sec-Fetch-Dest: empty
- Sec-Fetch-Mode: no-cors

Now we can also check the response:

The screenshot shows the Network tab in the Chrome DevTools. A DELETE request is made to the URL https://us-east1-cdd561-project-1.cloudfunctions.net/python-http-function/hw2nrbhgsutl/test-dir/106.html. The response status is 501 Method not implemented. The Headers section shows the following:

Header	Value
Content-Type	text/html; charset=UTF-8
Date	Tue, 10 Oct 2023 16:53:12 GMT
Server	Google Frontend
x-cloud-trace-context	e30c50a4f95722f54eb3b83b1ace830e

The Response tab shows the following content:

```
Method not implemented.
```

Other than this when you use the url provided by the describe function you will get the same result.

Browser Search and Browser Response Header Status :

The screenshot shows the Network tab in the Chrome DevTools. A DELETE request is made to the URL https://python-http-function-yrtpl6yfcmq-ue.a.run.app/hw2nrbhgsutl/test-dir/106.html. The response status is 501 Method not implemented. The Headers tab is selected, showing the following detailed header information:

Name	Value
alt-svc	h3=“443”; ma=2592000,h3-29=“443”; ma=2592000
content-length	23
content-type	text/html; charset=UTF-8
date	Tue, 10 Oct 2023 16:53:12 GMT
server	Google Frontend
x-cloud-trace-context	e30c50a4f95722f54eb3b83b1ace830e

The Response tab shows the following content:

```
Method not implemented.
```

Browser Response Status:

The screenshot shows the Network tab in the Chrome DevTools. A DELETE request is made to the URL https://python-http-function-yrtpl6yfcmq-ue.a.run.app/hw2nrbhgsutl/test-dir/106.html. The response status is 501 Method not implemented. The Headers tab is selected, showing the following detailed header information:

Name	Value
Content-Type	text/html; charset=UTF-8
Date	Tue, 10 Oct 2023 16:53:12 GMT
Server	Google Frontend
X-Cloud-Trace-Context	e30c50a4f95722f54eb3b83b1ace830e

The Response tab shows the following content:

```
Method not implemented.
```

HEAD REQUEST:

For checking the HEAD request, we can use the network section on Firefox and type in the URL (same URL as we are trying to access the file in the directory of the bucket) and specify the HEAD request and then click on the send button:

The screenshot shows the Firefox Network tab with the following details:

- New Request:** HEAD → https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsut... (Status: 404, GET, document, html, 293 B, 38 B)
- URL Parameters:** name (value: value)
- Headers:** name (value: value)
- Body:** payload
- Table Headers:** Status, Method, Domain, File, Initiator, Type, Transferred, Size
- Table Data:**
 - 404 GET https://us-east1-cdsds561-project-1.cloudfunctions.net/favicon.ico (document, html, cached, 272 B)
 - 501 HEAD https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsut.../test-dir106.html (NetUtil.sys..., html, 255 B, 0 B)
- Buttons:** Clear, Send
- Metrics:** 3 requests, 310 B / 548 B transferred, Finish: 15.51 s, DOMContentLoaded: 1.27 s, load: 1.27 s

And then we can check of the response status and header that we get for the following HEAD request:

The screenshot shows the Firefox Network tab with the following details:

- New Request:** HEAD → https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsut... (Status: 404, GET, document, html, 293 B, 38 B)
- URL Parameters:** name (value: value)
- Headers:** name (value: value)
- Body:** payload
- Table Headers:** Status, Method, Domain, File, Initiator, Type, Transferred, Size
- Table Data:**
 - 404 GET https://us-east1-cdsds561-project-1.cloudfunctions.net/favicon.ico (document, html, cached, 272 B)
 - 501 HEAD https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsut.../test-dir106.html (NetUtil.sys..., html, 255 B, 0 B)
- Filter Headers:** Headers, Cookies, Request, Response, Timings, Stack Trace, Security
- Response Headers:**
 - Status: 501
 - Version: HTTP/3
 - Transferred: 255 B (0 B size)
 - DNS Resolution: DNS over HTTPS
 - Response Headers (255 B):
 - alt-svc: h3=":443"; ma=259000;h3-29=":443"; ma=259200
 - content-length: 23
 - content-type: text/html; charset=utf-8
 - date: Sun, 08 Oct 2023 19:27:20 GMT
 - server: Google Frontend
 - x-cloud-trace-context: 13c07143cb369e99e8fb82deb633638o+1
 - Request Headers (446 B):
 - Accept: */*
 - Accept-Encoding: gzip, deflate, br
 - Accept-Language: en-US,en;q=0.5
 - Cache-Control: no-cache
 - Connection: keep-alive
 - Host: us-east1-cdsds561-project-1.cloudfunctions.net
 - Pragma: no-cache
 - Sec-Fetch-Dest: empty
 - Sec-Fetch-Mode: no-cors
 - Sec-Fetch-Site: same-origin
- Metrics:** 3 requests, 310 B / 548 B transferred, Finish: 15.51 s, DOMContentLoaded: 1.27 s, load: 1.27 s

Now we can also check the response:

No response data available for this request

Other than this when you use the url provided by the describe function you will get the same result.

Browser Search and Browser Response Header Status :

Response Headers (251 B)

- alt-etc: h3->443"; ma=2592000;h3-29->443"; ma=2592000
- content-length: 23
- content-type: text/html; charset=UTF-8
- date: Tue, 10 Oct 2023 16:57:28 GMT
- server: Google Frontend
- x-cloud-trace-context: abx4ca0ac7ab34364f5414587ce2f2

Request Headers (423 B)

- Accept: */*
- Accept-Encoding: gzip, deflate, br
- Accept-Language: en-US,en;q=0.5
- Cache-Control: no-cache
- Connection: keep-alive
- Host: python-http-function-yrtpl6ycmq-ue.a.run.app
- Pragma: no-cache
- Sec-Fetch-Dest: empty
- Sec-Fetch-Mode: no-cors
- Sec-Fetch-Site: same-origin
- TE: trailers
- User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:109.0) Gecko/20100101 Firefox/118.0

Browser Response Status:

No response data available for this request

CONNECT REQUEST:

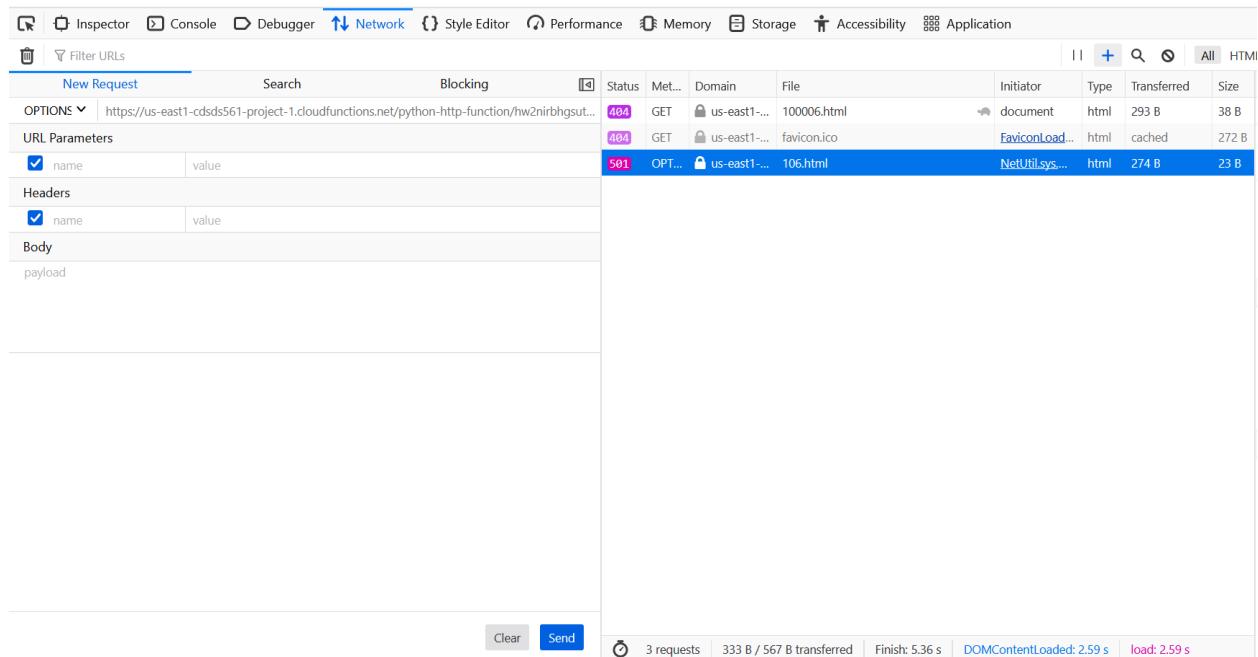
Using the CONNECT request method in a Google Cloud Function can be hard due to the constraints of the Google Cloud Functions environment. Google Cloud Functions mainly focuses on handling common HTTP methods like GET and POST, but it doesn't natively support all HTTP methods, like CONNECT.

The CONNECT method is used in the context of HTTP proxies and tunnels for secure communication. Since Google Cloud Functions is not designed for acting as an HTTP proxy server, handling CONNECT requests directly within a Cloud Function is not straightforward.

Connect request was not present in chrome and firefox browsers.

OPTIONS REQUEST:

For checking the OPTIONS request, we can use the network section on Firefox and type in the URL (same URL as we are trying to access the file in the directory of the bucket) and specify the OPTIONS request and then click on the send button:



The screenshot shows the Firefox Developer Tools Network tab. The 'New Request' section has 'OPTIONS' selected in the dropdown. The URL is set to 'https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsut...'. Under 'URL Parameters', there is a checked checkbox labeled 'name' with the value 'value'. The 'Headers' section also has a checked checkbox labeled 'name' with the value 'value'. The 'Body' section is empty and labeled 'payload'. The main table lists three network requests:

	Status	Method	Domain	File	Initiator	Type	Transferred	Size
404	GET	us-east1...	100006.html		document	html	293 B	38 B
404	GET	us-east1...	favicon.ico		FaviconLoad...	html	cached	272 B
501	OPT...	us-east1...	106.html		NetUtil.sys...	html	274 B	23 B

At the bottom, there are 'Clear' and 'Send' buttons, and a status bar showing '3 requests 333 B / 567 B transferred | Finish: 5.36 s | DOMContentLoaded: 2.59 s | load: 2.59 s'.

And then we can check of the response status that we get for the following OPTIONS request:

The screenshot shows the Network tab in the Chrome DevTools. A successful OPTIONS request is listed with the status code 200. The response headers include:

- Status: 200
- Version: HTTP/2
- Transferred: 274 B (23 B size)
- DNS Resolution: DNS over HTTPS
- Response Headers (251 B):
 - alt-evc: h3-2443; ma=2592000;h3-29-~443; ma=2592000
 - content-length: 23
 - content-type: text/html; charset=utf-8
 - date: Sun, 08 Oct 2023 20:03:53 GMT
 - server: Google Frontend
 - x-cloud-trace-context: 00614b22072118e6407c74a5f97ce95
- Request Headers (513 B):
 - Accept: */*
 - Accept-Encoding: gzip, deflate, br
 - Accept-Language: en-US,en;q=0.5
 - Cache-Control: no-cache
 - Connection: keep-alive
 - Host: us-east1-cdd561-project-1.cloudfunctions.net
 - Origin: https://us-east1-cdd561-project-1.cloudfunctions.net
 - Pragma: no-cache
 - Sec-Fetch-Dest: empty
 - Sec-Fetch-Mode: no-cors
 - Sec-Fetch-Site: none

Now we can also check the response:

The screenshot shows the Network tab in the Chrome DevTools. An OPTIONS request is listed with the status code 404, indicating "Method not implemented." The response headers are identical to the successful request above.

Other than this when you use the url provided by the describe function you will get the same result.

Browser Search and Browser Response Header Status :

The screenshot shows the Network tab in the Chrome DevTools. A successful OPTIONS request is listed with the status code 200. The response headers include:

- Status: 200
- Version: HTTP/2
- Transferred: 274 B (23 B size)
- DNS Resolution: DNS over HTTPS
- Response Headers (251 B):
 - alt-evc: h3-2443; ma=2592000;h3-29-~443; ma=2592000
 - content-length: 23
 - content-type: text/html; charset=utf-8
 - date: Tue, 10 Oct 2023 16:59:42 GMT
 - server: Google Frontend
 - x-cloud-trace-context: 8be6e634de9d95c75467673d1f25ad
- Request Headers (488 B):
 - Accept: */*
 - Accept-Encoding: gzip, deflate, br
 - Accept-Language: en-US,en;q=0.5
 - Cache-Control: no-cache
 - Connection: keep-alive
 - Host: python-http-function-yrtpl6fcmq-ue.a.run.app
 - Origin: https://python-http-function-yrtpl6fcmq-ue.a.run.app
 - Pragma: no-cache
 - Sec-Fetch-Dest: empty
 - Sec-Fetch-Mode: no-cors
 - Sec-Fetch-Site: same-origin
 - TE: trailers
 - User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:109.0) Gecko/20100101 Firefox/118.0

Browser Response Status:

TRACE REQUEST:

Google Cloud Functions has certain limitations and does not support all HTTP methods, including TRACE, in the same way a full web server might. Google Cloud Functions mainly focuses on handling common HTTP methods like GET and POST, but it doesn't provide built-in support for custom handling of TRACE requests.

Response for the Trace request:

Other than this when you use the url provided by the describe function you will get the same result.

Browser Search and Browser Response Header Status :

Browser Response Status:

The screenshot shows the Firefox Developer Tools Network tab. A TRACE request to `/test-dir/106.html` was made, which resulted in a 405 error. The response body contains the message: "405. That's an error. The request method TRACE is inappropriate for the URL /hw2nirbhgsutil/test-dir/106.html. That's all we know."

PATCH REQUEST:

For checking the PATCH request, we can use the network section on Firefox and type in the URL (same URL as we are trying to access the file in the directory of the bucket) and specify the PATCH request and then click on the send button:

The screenshot shows the Firefox Developer Tools Network tab. A PATCH request to `https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html` was made, which resulted in a 501 error. The response body contains the message: "501. That's an error. The request method PATCH is inappropriate for the URL https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html. That's all we know."

And then we can check of the response status that we get for the following PATCH request:

The screenshot shows the Network tab in the Chrome DevTools. A PATCH request is being made to the specified URL. The response header indicates a status of 501 Method Not Implemented. The response body contains the text "Method not implemented."

Now we can also check the response:

The screenshot shows the Network tab in the Chrome DevTools. A PATCH request is being made to the specified URL. The response header indicates a status of 501 Method Not Implemented. The response body contains the text "Method not implemented."

URL for all the above cases is as follows:

<https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html>

Other than this when you use the url (

<https://python-http-function-yrt6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html>) provided by the describe function you will get the same result.

Browser Search and Browser Response Header Status :

Browser Response Status:

CURL COMMANDS:

Other than checking through the browser, we can check the following requests scenarios using the curl commands, some of them are displayed below:

GET Request Method:

For the get request method we can use the following command:

```

c:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X GET https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html
<!DOCTYPE html>
<html>
<body>


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<p><a href="3427.html"> This is a link </a></p>

```

When we use the curl for the get request, I get the following result: the requested file's content gets accessed.

Other than this when you use the url provided by the describe function you will get the same result.

Cloud Logging:

2023-10-10 17:55:19.084 EDT GET 200 92.17 Kib 176 ms curl 8.0.1 https://python-http-function-yrt6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html

Copy Similar entries Expand nested fields Hide log summary

```
{
  httpRequest: {10}
  insertId: "6525c8470004049aa7eaa50d"
  labels: {2}
  logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests"
  receiveTimestamp: "2023-10-10T21:55:19.358250379Z"
  resource: {2}
  severity: "INFO"
  spanId: "6451811983293814141"
  timestamp: "2023-10-10T21:55:19.084551Z"
  trace: "projects/cdsds561-project-1/traces/ddb8b7f00fde89413457d5c370a08cc0"
  traceSampled: true
}
```

2023-10-10 17:55:19.084 EDT python http function Country of origin: Unknown

Curl Search :

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X GET https://python-http-function-yrt6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
<!DOCTYPE html>
<html>
<body>


Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.


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<p><a href="556.html"> This is a link </a></p>
<p><a href="4460.html"> This is a link </a></p>
<p><a href="652.html"> This is a link </a></p>
<p><a href="9066.html"> This is a link </a></p>
<p><a href="808.html"> This is a link </a></p>
<p><a href="5964.html"> This is a link </a></p>
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<p><a href="100006.html"> This is a link </a></p>
```

FILE NOT FOUND ERROR:

When we pass in a file for the get request that doesn't exist in the directory, we get the file not found error.

Curl command for the following:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X GET https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/100006.html
File 'test-dir/100006.html' not found.
```

Cloud Logging Error:

2023-10-09 12:56:31.479 EDT python-http-function Error while fetching file: 404 GET https://storage.googleapis.com/download/storage/v1/b/hw2nirbhgsutil/o/test-dir%2F100006.html?alt=media: No such object: hw2nirbhgsutil/test-dir/100006.html: ('Request failed with status code', 404, 'Expected one of', <HTTPStatus.OK: 200>, <HTTPStatus.PARTIAL_CONTENT: 206>)

Copy Similar entries Expand nested fields Hide log summary

```
{
  insertId: "chqebdfrwxqv1"
  logName: "projects/cdsds561-project-1/logs/get-func-log"
  receiveTimestamp: "2023-10-09T16:56:31.479285309Z"
  resource: {
    labels: {3}
    type: "cloud_function"
  }
  textPayload:
    "Error while fetching file: 404 GET https://storage.googleapis.com/download/storage/v1/b/hw2nirbhgsutil/o/test-dir%2F100006.html?alt=media: No such object: hw2nirbhgsutil/test-dir/100006.html: ('Request failed with status code', 404, 'Expected one of', <HTTPStatus.OK: 200>, <HTTPStatus.PARTIAL_CONTENT: 206>)"
  timestamp: "2023-10-09T16:56:31.479285309Z"
}
```

2023-10-09 12:56:31.757 EDT python-http-function File Not Found. Error 404

Copy Similar entries Expand nested fields Hide log summary

```
{
  insertId: "chiyklesaz5j"
  logName: "projects/cdsds561-project-1/logs/my-function-log"
  receiveTimestamp: "2023-10-09T16:56:31.757899429Z"
  resource: {
    labels: {3}
    type: "cloud_function"
  }
  severity: "ERROR"
  textPayload: "File Not Found. Error 404"
  timestamp: "2023-10-09T16:56:31.757899429Z"
}
```

Other than this when you use the url provided by the describe function you will get the same result.

Curl Search :

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X GET https://python-http-function-yrtpp6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/100006.html
File 'test-dir/100006.html' not found.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>
```

Cloud Logging Result :

2023-10-10 13:09:29.805 EDT GET 404 690 B 580 ms curl 8.0.1 https://python-http-function-yrtpp6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/100006.html

Copy Similar entries Expand nested fields Hide log summary

```
{
  httpRequest: {10}
  insertId: "6525854a0005fc1dc15ab29"
  labels: {
    goog-managed-by: "cloudfunctions"
    instanceId: "00fd0ee57b3cbd35ac7227f7f069dce885e06a4375272f8bad4c24d1de207c409fb6680cf58687a75f95d761936d62df3f7fde37f42814c49c2332d58ae2709487"
  }
  logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests"
  receiveTimestamp: "2023-10-10T17:09:30.400410979Z"
  resource: {
    labels: {5}
    type: "cloud_run_revision"
  }
  severity: "WARNING"
  spanId: "15888874615557128762"
  timestamp: "2023-10-10T17:09:29.805216Z"
  trace: "projects/cdsds561-project-1/traces/1ce7f66e4d6491b014ff6e42057ee896"
  traceSampled: true
}
```

2023-10-10 13:09:30.277 EDT python-http-function File Not Found. Error 404

Copy Similar entries Expand nested fields Hide log summary

```
{
  insertId: "8vxj8wg10uiefe"
  logName: "projects/cdsds561-project-1/logs/my-function-log"
  receiveTimestamp: "2023-10-10T17:09:30.277308635Z"
  resource: {
    labels: {}
    type: "cloud_function"
  }
  severity: "ERROR"
  textPayload: "File Not Found. Error 404"
  timestamp: "2023-10-10T17:09:30.277308635Z"
}
```

POST REQUEST METHOD:

Curl Command for the post request is as follows:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X POST -H "Content-length: 0" https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html
Method not implemented.
```

Since the following request method isn't implemented, we get the 501 error for the following request.

Cloud Logging:

2023-10-08 21:48:02.380 EDT POST 501 675 B 142 ms curl 8.0.1 https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html

Copy Similar entries Expand nested fields Hide log summary

```
{
  httpRequest: {
    insertId: "65235bd200081c179fbbd248"
    labels: {}
    logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests"
    receiveTimestamp: "2023-10-09T01:48:02.537202728Z"
  }
  resource: {
    labels: {}
    type: "cloud_function"
  }
  severity: "ERROR"
  spanId: "14066900504047757128"
  timestamp: "2023-10-09T01:48:02.380940Z"
  trace: "projects/cdsds561-project-1/traces/5256c7c5f7bc791ebbeb2cdf7c9b24e3"
  traceSampled: true
}
```

2023-10-08 21:48:02.429 EDT python-http-function Unsupported HTTP method: POST

Copy Similar entries Expand nested fields Hide log summary

```
{
  insertId: "139p8jfmm1ad2"
  logName: "projects/cdsds561-project-1/logs/my-function-log"
  receiveTimestamp: "2023-10-09T01:48:02.429255582Z"
  resource: {
    labels: {}
    type: "cloud_function"
  }
  severity: "ERROR"
  textPayload: "Unsupported HTTP method: POST"
  timestamp: "2023-10-09T01:48:02.429255582Z"
}
```

Other than this when you use the url provided by the describe function you will get the same result.

Curl Search :

```
FILE "test-dir/106.html" not found.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X POST -H "Content-length: 0" https://python-http-function-yrt6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
Method not implemented.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>
```

Cloud Logging Result :



```
2023-10-10 13:12:06.560 EDT POST 501 675 B 834 ms curl 8.0.1 https://python-http-function-yrt6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
{
  httpRequest: {
    insertId: "652585e700066135bb10db6d"
    labels: {
      logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests"
      receiveTimestamp: "2023-10-10T17:12:07.426485279Z"
    }
    resource: {
      severity: "ERROR"
      spanId: "1386107977323833206"
      timestamp: "2023-10-10T17:12:06.560833Z"
      trace: "projects/cdsds561-project-1/traces/14c484abaa530f0bc0d666dc19d866f"
      traceSampled: true
    }
  }
}
```



```
2023-10-10 13:12:07.337 EDT python-http-function Unsupported HTTP method: POST
{
  insertId: "b3tzb2g1f10axn"
  logName: "projects/cdsds561-project-1/logs/my-function-log"
  receiveTimestamp: "2023-10-10T17:12:07.337160862Z"
  resource: {
    labels: {
      type: "cloud_function"
    }
    severity: "ERROR"
    textPayload: "Unsupported HTTP method: POST"
    timestamp: "2023-10-10T17:12:07.337160862Z"
  }
}
```

PUT REQUEST METHOD:

Curl Command for the put request is as follows:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X PUT -H "Content-length: 0" https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html
Method not implemented.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>
```

Since the following request method isn't implemented, we get the 501 error for the following request.

Cloud Logging:

2023-10-08 21:48:16.330 EDT PUT 501 675 B 142 ms curl 8.0.1 https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html

Copy Similar entries Expand nested fields Hide log summary

```
{
  httpRequest: {10}
  insertId: "65235be000073efc2e7a0934"
  labels: {2}
  logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests"
  receiveTimestamp: "2023-10-09T01:48:16.480200990Z"
  resource: {2}
  severity: "ERROR"
  spanId: "15531123069042187246"
  timestamp: "2023-10-09T01:48:16.330329Z"
  trace: "projects/cdsds561-project-1/traces/0b44a40e4e01df3710ff2bf55dcc2c41"
  traceSampled: true
}
```

2023-10-08 21:48:16.416 EDT python-http-function Unsupported HTTP method: PUT

Copy Similar entries Expand nested fields Hide log summary

```
{
  insertId: "uswh23fmwoff5"
  logName: "projects/cdsds561-project-1/logs/my-function-log"
  receiveTimestamp: "2023-10-09T01:48:16.416655923Z"
  resource: {
    labels: {3}
    type: "cloud_function"
  }
  severity: "ERROR"
  textPayload: "Unsupported HTTP method: PUT"
  timestamp: "2023-10-09T01:48:16.416655923Z"
}
```

Other than this when you use the url provided by the describe function you will get the same result.

Curl Search :

```
Method not implemented.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X PUT -H "Content-length: 0" https://python-http-function-yrt6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
Method not implemented.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>
```

Cloud Logging Result :

2023-10-10 13:14:26.599 EDT PUT 501 675 B 233 ms curl 8.0.1 https://python-http-function-yrt6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html

Copy Similar entries Expand nested fields Hide log summary

```
{
  httpRequest: {10}
  insertId: "65258672000ce47e3971ac2f"
  labels: {2}
  logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests"
  receiveTimestamp: "2023-10-10T17:14:26.851669437Z"
  resource: {2}
  severity: "ERROR"
  spanId: "4180719187878185771"
  timestamp: "2023-10-10T17:14:26.599329Z"
  trace: "projects/cdsds561-project-1/traces/6c074d7d6e46897ebb9af93a400dc7e5"
  traceSampled: true
}
```

2023-10-10 13:14:26.781 EDT python-http-function Unsupported HTTP method: PUT

```
{
  insertId: "f9ibzmfzjywxb"
  logName: "projects/cdsds561-project-1/logs/my-function-log"
  receiveTimestamp: "2023-10-10T17:14:26.781037363Z"
  resource: {
    labels: {3}
    type: "cloud_function"
  }
  severity: "ERROR"
  textPayload: "Unsupported HTTP method: PUT"
  timestamp: "2023-10-10T17:14:26.781037363Z"
}
```

DELETE REQUEST METHOD:

Curl Command for the delete request is as follows:

```
Method not implemented.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X DELETE https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html
Method not implemented.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>
```

Since the following request method isn't implemented, we get the 501 error for the following request.

Cloud Logging:

2023-10-08 22:08:40.409 EDT DELETE 501 733 B 2.2 s curl 8.0.1 https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html

```
{
  httpRequest: {10}
  insertId: "652360aa000c00551c8f86dc"
  labels: {
    goog-managed-by: "cloudfunctions"
    instanceId: "00fd0ee57b34c107422c45e4f7482168b9b47b081c699588c6a9c6a581c96dadaddac5f84f843072fde92234c11db65f0a00fcf3e8c0f15e61fb62acc709090d"
  }
  logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests"
  receiveTimestamp: "2023-10-09T02:08:42.790966202Z"
  resource: {
    labels: {5}
    type: "cloud_run_revision"
  }
  severity: "ERROR"
  spanId: "0475641302701250742"
  timestamp: "2023-10-09T02:08:40.409660Z"
  trace: "projects/cdsds561-project-1/traces/9e4f8814ac4c27dccf6341fd3dc22670"
  traceSampled: true
}
```

2023-10-08 22:08:42.709 EDT python-http-function Unsupported HTTP method: DELETE

```
{
  insertId: "1trs06tfukc4h1"
  logName: "projects/cdsds561-project-1/logs/my-function-log"
  receiveTimestamp: "2023-10-09T02:08:42.709818119Z"
  resource: {2}
  severity: "ERROR"
  textPayload: "Unsupported HTTP method: DELETE"
  timestamp: "2023-10-09T02:08:42.709818119Z"
}
```

Other than this when you use the url provided by the describe function you will get the same result.

Curl Search :

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X DELETE https://python-http-function-yrt6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
Method not implemented.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>
```

Cloud Logging Result :

```
2023-10-10 13:16:56.749 EDT      DELETE 501    675 B  279 ms curl 8.0.1 https://python-http-function-yrt6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
Copy Similar entries Expand nested fields Hide log summary

{
  httpRequest: {10}
  insertId: "6525870900008ef691162535"
  labels: {}
  logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests"
  receiveTimestamp: "2023-10-10T17:16:57.043448416Z"
  resource: {2}
  severity: "ERROR"
  spanId: "11665703608322501616"
  timestamp: "2023-10-10T17:16:56.749969Z"
  trace: "projects/cdsds561-project-1/traces/f8edb943a84617c1b63af67f7adc35c9"
  traceSampled: true
}

2023-10-10 13:16:56.967 EDT      python-http-function Unsupported HTTP method: DELETE
Copy Similar entries Expand nested fields Hide log summary

{
  insertId: "zst86jfzxfy7f"
  logName: "projects/cdsds561-project-1/logs/my-function-log"
  receiveTimestamp: "2023-10-10T17:16:56.967961946Z"
  resource: {
    labels: {3}
    type: "cloud_function"
  }
  severity: "ERROR"
  textPayload: "Unsupported HTTP method: DELETE"
  timestamp: "2023-10-10T17:16:56.967961946Z"
}
```

HEAD REQUEST METHOD:

Curl Command for the head request is as follows:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -I -X HEAD https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html
HTTP/1.1 501 Not Implemented
Content-Type: text/html; charset=utf-8
X-Cloud-Trace-Context: 3fc3f93f7de89fe7f8e3ac9922c7405; o=1
Content-Length: 23
Date: Sun, 08 Oct 2023 21:10:32 GMT
Server: Google Frontend
Alt-Svc: h3=":443"; ma=2592000, h3-29=":443"; ma=2592000
```

Since the following request method isn't implemented, we get the 501 error for the following request.

Cloud Logging:

2023-10-08 22:24:09.770 EDT HEAD 501 651 B 88 ms curl 8.0.1 https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html

Copy Similar entries Expand nested fields Hide log summary

```
{
  httpRequest: {10}
  insertId: "65236449000d3b480766b1ab"
  labels: {2}
  logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests"
  receiveTimestamp: "2023-10-09T02:24:09.872817966Z"
  resource: {2}
  severity: "ERROR"
  spanId: "383058495549362980"
  timestamp: "2023-10-09T02:24:09.770186Z"
  trace: "projects/cdsds561-project-1/traces/fa4d1132d90a2cefc0e775e4e9172657"
  traceSampled: true
}
```

2023-10-08 22:24:09.818 EDT python-http-function Unsupported HTTP method: HEAD

Copy Similar entries Expand nested fields Hide log summary

```
{
  insertId: "1qzwkpcfn3a93j"
  logName: "projects/cdsds561-project-1/logs/my-function-log"
  receiveTimestamp: "2023-10-09T02:24:09.818429773Z"
  resource: {
    labels: {3}
    type: "cloud_function"
  }
  severity: "ERROR"
  textPayload: "Unsupported HTTP method: HEAD"
  timestamp: "2023-10-09T02:24:09.818429773Z"
}
```

Other than this when you use the url provided by the describe function you will get the same result.

Curl Search :

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -I -X HEAD https://python-http-function-yrtpp6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
HTTP/1.1 501 Not Implemented
content-type: text/html; charset=utf-8
X-Cloud-Trace-Context: 06b191276eb0191a576444db05efa84;o=1
Content-Length: 23
Date: Tue, 10 Oct 2023 20:59:42 GMT
Server: Google Frontend
Alt-Svc: h3=":443"; ma=2592000,h3-29=":443"; ma=2592000
```

Cloud Logging Result :

2023-10-10 16:59:39.334 EDT HEAD 501 710 B 2.971 s curl 8.0.1 https://python-http-function-yrtpp6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html

Copy Similar entries Expand nested fields Hide log summary

```
{
  httpRequest: {10}
  insertId: "6525bb3e000923fa1778db31"
  labels: {2}
  logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests"
  receiveTimestamp: "2023-10-10T20:59:42.604258093Z"
  resource: {2}
  severity: "ERROR"
  spanId: "5463299837071740095"
  timestamp: "2023-10-10T20:59:39.334472Z"
  trace: "projects/cdsds561-project-1/traces/06b191276eb0191a576444db05efa84"
  traceSampled: true
}
```

2023-10-10 16:59:42.384 EDT python-http-function Unsupported HTTP method: HEAD

Copy Similar entries Expand nested fields Hide log summary

```
{
  insertId: "10cmtsvg11i12qi"
  logName: "projects/cdsds561-project-1/logs/my-function-log"
  receiveTimestamp: "2023-10-10T20:59:42.384546523Z"
  resource: {
    labels: {3}
    type: "cloud_function"
  }
  severity: "ERROR"
  textPayload: "Unsupported HTTP method: HEAD"
  timestamp: "2023-10-10T20:59:42.384546523Z"
}
```

CONNECT REQUEST METHOD:

Using the CONNECT request method in a Google Cloud Function can be hard due to the constraints of the Google Cloud Functions environment. Google Cloud Functions mainly focuses on handling common HTTP methods like GET and POST, but it doesn't natively support all HTTP methods, like CONNECT.

The CONNECT method is used in the context of HTTP proxies and tunnels for secure communication. Since Google Cloud Functions is not designed for acting as an HTTP proxy server, handling CONNECT requests directly within a Cloud Function is not straightforward.

Curl command for connect request method:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X CONNECT https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html
<!DOCTYPE html>
<html lang=en>
<meta charset=utf-8>
<meta name=viewport content="initial-scale=1, minimum-scale=1, width=device-width">
<title>Error 400 (Bad Request)!!</title>
<style>
<margin:0;padding:0>html,code{font:15px/22px arial,sans-serif}html{background:#fff;color:#222;padding:15px}body{margin:7% auto 0;max-width:390px;min-height:180px;padding:30px 0 15px}* > body{background:ur
l(//www.google.com/images/errors/robot.png) 100% 5px no-repeat;padding-right:205px;position:relative}margin:1px 0 2px;overflow:hidden}ins{color:#777;text-decoration:none}img{border:0}@media screen and (max-width:772px){bo
dy{background:ur
l(//www.google.com/images/errors/robot.png) 100% 5px no-repeat;padding-right:0}#logo{background:url(//www.google.com/images/branding/googlelogo/1x/googlelogo_color_100x44dp.png) no-repeat;position:left;-webkit-media only screen
and (max-resolution:192dp)},{#logo{background:url(//www.google.com/images/branding/googlelogo/2x/googlelogo_color_192x44dp.png) no-repeat;position:left;transform:scale 8% 8%/100% 100%;-moz-border-image:url(//www.google.com/images/branding/g
ooglelogo/2x/googlelogo_color_192x44dp.png) no-re
peat;webkit-background-size:100% 100%}}#logo{display:inline-block;height:54px;width:150px}
</style>
<a href=//www.google.com/>

```

Cloud Logging: I don't receive any error messages.

Other than this when you use the url provided by the describe function you will get the same result.

Curl Search :

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>
<!DOCTYPE html>
<html lang=en>
<meta charset=utf-8>
<meta name=viewport content="initial-scale=1, minimum-scale=1, width=device-width">
<title>Error 400 (Bad Request)!!</title>
<style>
<margin:0;padding:0>html,code{font:15px/22px arial,sans-serif}html{background:#fff;color:#222;padding:15px}body{margin:7% auto 0;max-width:390px;min-height:180px;padding:30px 0 15px}* > body{background:ur
l(//www.google.com/images/errors/robot.png) 100% 5px no-repeat;padding-right:205px;position:relative}margin:1px 0 2px;overflow:hidden}ins{color:#777;text-decoration:none}img{border:0}@media screen and (max-width:772px){bo
dy{background:ur
l(//www.google.com/images/errors/robot.png) 100% 5px no-repeat;padding-right:0}#logo{background:url(//www.google.com/images/branding/googlelogo/1x/googlelogo_color_100x44dp.png) no-repeat;position:left;-webkit-media only screen
and (max-resolution:192dp)},{#logo{background:url(//www.google.com/images/branding/googlelogo/2x/googlelogo_color_192x44dp.png) no-repeat;position:left;transform:scale 8% 8%/100% 100%;-moz-border-image:url(//www.google.com/images/branding/g
ooglelogo/2x/googlelogo_color_192x44dp.png) no-re
peat;webkit-background-size:100% 100%}}#logo{display:inline-block;height:54px;width:150px}
</style>
<a href=//www.google.com/>

```

Cloud Logging Result : No result.

OPTIONS REQUEST METHOD:

Curl Command for the OPTIONS request is as follows:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X OPTIONS https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html
Method not implemented.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>
```

Cloud Logging:

The screenshot shows the Cloud Logging interface with two log entries. The top entry is for a successful OPTIONS request (status 200) and the bottom entry is for an unsupported OPTIONS request (status 501).

Log 1 (Successful OPTIONS Request):

```
2023-10-08 22:08:52.919 EDT OPTIONS 501 675 B 180 ms curl 8.0.1 https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html
```

Log 2 (Unsupported OPTIONS Request):

```
2023-10-08 22:08:53.022 EDT python-http-function Unsupported HTTP method: OPTIONS
```

Since the following request method isn't implemented, we get the 501 error for the following request.

Other than this when you use the url provided by the describe function you will get the same result.

Curl Search :

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X OPTIONS https://python-http-function-yrtpp6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
Method not implemented.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>
```

Cloud Logging Result :

```

2023-10-10 17:03:34.736 EDT OPTIONS 501 675 B 160 ms curl 8.0.1 https://python-http-function-yrtpp6yfcmg-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
{
  httpRequest: {
    insertId: "6525bc26000dd40e3b369f58"
    labels: {
      logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests"
      receiveTimestamp: "2023-10-10T21:03:34.913259300Z"
    }
    resource: {
      severity: "ERROR"
      spanId: "17843965015668962581"
      timestamp: "2023-10-10T21:03:34.736536Z"
      trace: "projects/cdsds561-project-1/traces/d35ac41821583087c1199b6c3b3c3ee6"
      traceSampled: true
    }
  }
}

2023-10-10 17:03:34.802 EDT python-http-function Unsupported HTTP method: OPTIONS
{
  insertId: "n1o9u7flepb8e"
  logName: "projects/cdsds561-project-1/logs/my-function-log"
  receiveTimestamp: "2023-10-10T21:03:34.802366497Z"
  resource: {
    labels: {
      type: "cloud_function"
    }
    severity: "ERROR"
    textPayload: "Unsupported HTTP method: OPTIONS"
    timestamp: "2023-10-10T21:03:34.802366497Z"
  }
}

```

TRACE REQUEST METHOD:

Google Cloud Functions has certain limitations and does not support all HTTP methods, including TRACE, in the same way a full web server might. Google Cloud Functions mainly focuses on handling common HTTP methods like GET and POST, but it doesn't provide built-in support for custom handling of TRACE requests.

Curl command for TRACE REQUEST:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X TRACE https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html
<!DOCTYPE html>
<html lang=en>
<meta charset=utf-8>
<meta name=viewport content="initial-scale=1, minimum-scale=1, width=device-width">
<title>Error 405 (Method Not Allowed)!1</title>
<style>
<style>@margin:0;padding:0;html,code{font:15px/22px arial,sans-serif}html{background:#fff;color:#222;padding:15px}body{margin:7% auto 0;max-width:390px;padding:30px 0 15px}* > body{background:url(//www.google.com/images/errors/robot.png) 100% 5px no-repeat;padding-right:285px}[margin:1px 0 2px;overflow:hidden]ins{color:#777;text-decoration:none}img[border:0]@media screen and (max-width:772px){body{background:none;margin-top:8%;max-width:none;padding-right:0}}#flogo{background:url(//www.google.com/images/branding/googlelogo/2x/googlelogo_color_150x54dp.png) no-repeat;margin-left:-5px}@media only screen and (max-width:729px){#flogo{background:url(//www.google.com/images/branding/googlelogo/2x/googlelogo_color_150x54dp.png) no-repeat 0% 0%/100% 100%;-moz-border-image:url(//www.google.com/images/branding/googlelogo/2x/googlelogo_color_150x54dp.png) no-repeat;-webkit-background-size:100% 100%}#flogo{display:inline-block,height:34px;width:150px}
</style>
<a href="//www.google.com/"><span id=Logo aria-label=Google</span></a>
<p><b>405</b> <ins>That's an error.</ins>
<p>The request method <code>TRACE</code> is inappropriate for the URL <code>/python-http-function/hw2nirbhgsutil/test-dir/106.html</code>. <ins>That's all we know.</ins>
```

Cloud Logging: I don't receive any error messages.

Other than this when you use the url provided by the describe function you will get the same result.

Curl Search :

Cloud Logging Result : No Result.

PATCH REQUEST METHOD:

Curl Command for the PATCH request is as follows:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-qcf-check>curl -X PATCH https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html  
Method not implemented.  
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-qcf-check>
```

Cloud Logging:

<pre>v !! 2023-10-08 22:08:59.543 EDT PATCH 501 675 B 132 ms curl 8.0.1 https://us-east1-cdsds561-project-1.cloudfunctions.net/python-http-function/hw2nirbhgsutil/test-dir/106.html</pre>
<pre>Copy Similar entries Expand nested fields Hide log summary</pre>
<pre>{ httpRequest: {10} insertId: "652360bb000a56b30c5d12c0" labels: { goog-managed-by: "cloudfunctions" instanceId: "00fd0ee57b34c107422c45e4f7482168b9b47b081c699588c6a9c6a581c96dadaddac5f84f843072fde92234c11db65f0a00fcf3e8c0f15e61fb62acc709090d" } logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests" receiveTimestamp: "2023-10-09T02:08:59.776815316Z" resource: { labels: {5} type: "cloud_run_revision" } severity: "ERROR" spanId: "3785057730260148062" timestamp: "2023-10-09T02:08:59.543424Z" trace: "projects/cdsds561-project-1/traces/c918b9c6dc82bf31746657fd3e2188d7" }</pre>
<pre>v !! 2023-10-08 22:08:59.619 EDT python-http-function Unsupported HTTP method: PATCH</pre>
<pre>Copy Similar entries Expand nested fields Hide log summary</pre>
<pre>{ insertId: "m7p3refuiib3f" logName: "projects/cdsds561-project-1/logs/my-function-log" receiveTimestamp: "2023-10-09T02:08:59.619393613Z" resource: {2} severity: "ERROR" textPayload: "Unsupported HTTP method: PATCH" timestamp: "2023-10-09T02:08:59.619393613Z" }</pre>

Other than this when you use the url provided by the describe function you will get the same result.

Curl Search :

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>curl -X PATCH https://python-http-function-yrtpp6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
Method not implemented.
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>
```

Cloud Logging Result :

```
2023-10-10 17:08:07.504 EDT PATCH 501 675 B 243 ms curl 8.0.1 https://python-http-function-yrtpp6yfcmq-ue.a.run.app/hw2nirbhgsutil/test-dir/106.html
2023-10-10 17:08:07.704 EDT python-http-function Unsupported HTTP method: PATCH
```

Log details for the first entry:

```
{ httpRequest: {10} insertId: "6525bd37000bc030b5097d55" labels: {2} logName: "projects/cdsds561-project-1/logs/run.googleapis.com%2Frequests" receiveTimestamp: "2023-10-10T21:08:07.775862131Z" resource: {2} severity: "ERROR" spanId: "12424908370543666353" timestamp: "2023-10-10T21:08:07.704938Z" trace: "projects/cdsds561-project-1/traces/f3fe491c1903a66f45ba1284dcc54bd2" traceSampled: true }
```

Log details for the second entry:

```
{ insertId: "1yrcousg12gvjkc" logName: "projects/cdsds561-project-1/logs/my-function-log" receiveTimestamp: "2023-10-10T21:08:07.704559667Z" resource: { labels: {3} type: "cloud_function" } severity: "ERROR" textPayload: "Unsupported HTTP method: PATCH" timestamp: "2023-10-10T21:08:07.704559667Z" }
```

HTTP-CLIENT REQUEST:

Now in order to test the given http-client for requesting hundreds of google cloud storage files, we can use the following command:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>python http-client.py -d us-east1-cdsds561-project-1.cloudfunctions.net -b /python-http-function/hw2nirbhgsutil -w test-dir -n 100 -i 10000 -s -v
```

Or if you would like to have a larger number of files to be requested you can increase the number of requests.

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>python http-client.py -d us-east1-cdsds561-project-1.cloudfunctions.net -b /python-http-function/hw2nirbhgsutil -w test-dir -n 200 -i 10000 -s -v
```

Now, we can check the output of the following command as follows:

This is just one instance of the output where the http-client requests one of the files and provides the output.

Once we use the following command : `python http-client.py -d us-east1-cdsds561-project-1.cloudfunctions.net -b /python-http-function/hw2nirbhgsutil -w test-dir -n 100 -i 10000 -s -v`, we get the 100 file's contents as output.

Other than this when you use the url provided by the describe function you will get the same result.

Http Client Command:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>python http-client.py -d python+http-function-yrtpb6yfcmq-ue.a.run.app -b /hw2nirbhgsutil -w test-dir -n 100 -i 10000 -s -v
```

Result :

```
b';html= This is a link </a>\r\n<?r\nlorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad\rl\nminim veniam, quis nostrud exercitiation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse\rl\nccum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupiditat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.\r\n<?p>\r\n<?a href="7745.html"> This is a link </a>\r\n<?r\nlorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad\rl\nminim veniam, quis nostrud exercitiation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse\rl\nccum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupiditat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.\r\n<?p>\r\n<?a href="3588.html"> This is a link </a>\r\n<?r\nlorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad\rl\nminim veniam, quis nostrud exercitiation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse\rl\nccum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupiditat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.\r\n<?p>\r\n<?a href="303.html"> This is a link </a>\r\n<?r\nl\n
```

For the second application to be functional, we need to modify the first application and make it act as a publisher other than that we need to make the second application as a consumer.

For the following we need to create a topic using google cloud console:

LISTMETRICS

Filter topics[?](#)[☰](#)

<input type="checkbox"/>	Topic ID ↑	Encryption key	Topic name	Retention	
<input type="checkbox"/>	hw3nirbhgsutil	Google-managed	projects/cdsds561-project-1/topics/hw3nirbhgsutil	🔗	— ⋮

Topic name : projects/cdsds561-project-1/topics/hw3nirbhgsutil

Topic Id: [hw3nirbhgsutil](#)

Other than this we can also use the following command:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>gcloud pubsub topics create hw3nirbhgsutil
```

And for creating the subscription you can use the following command:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>gcloud pubsub subscriptions create hw3nirbhgsutil-sub --topic=hw3nirbhgsutil
```

I didn't have to create a subscription as when I created the topic a subscription was added to it and I had to use it with the second application which was a subscriber.

Subscription Id: [hw3nirbhgsutil-sub](#)

I modified the first application and added the countries that were listed as banned countries in an array and then I checked for the request's header if the following country that was one of the banned countries was listed as the country in the header we send the following request to the second application and the second application throws the Error 403 : Access is prohibited and provides the country from which the request came.

For the request to be sent, the first application acted as the publisher and published the following content on the topic and the second app that was open indefinitely being the subscriber subscribed to the subscription and then accessed the topic and extracted the request and then once the request was consumed by the subscriber the second application provides the error based on the forbidden request.

For checking if the second application uses the pub sub method for displaying the error. We can first deploy the first application as the google cloud function as we did above. And once deployed we can start the second application as follows:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>python second-app.py
Listening for messages on projects/cdsds561-project-1/subscriptions/hw3nirbhgsutil-sub..
```

Now we can use the http client for requesting the google cloud function, where we can request several files:

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>python http-client.py -d us-east1-cdsds561-project-1.cloudfunctions.net -b /python-http-function/hw2nirbhgsutil -w test-dir -n 100 -i 10000 -s -v
```

And then we can observe the second application to see the forbidden request and error that we get and the country which requested the following file. Forbidden request on second app will be displayed as follows:

```
Received forbidden request from country: Syria
Error: Access is prohibited. Error 403
Received forbidden request from country: Iran
Error: Access is prohibited. Error 403
Received forbidden request from country: Zimbabwe
Error: Access is prohibited. Error 403
Received forbidden request from country: Libya
Error: Access is prohibited. Error 403
Received forbidden request from country: Zimbabwe
Error: Access is prohibited. Error 403
```

Other than this when you use the url provided by the describe function you will get the same result.

Http-Client Search :

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>python http-client.py -d python=http-function-yrt6yfcmq-ue.a.run.app -b /hw2nirbhgsutil -w test-dir -n 100 -i 10000 -s -v
```

Second App Result :

```
C:\Users\nirbh\AppData\Local\Google\Cloud SDK\first-gcf-check>python second-app.py
Listening for messages on projects/cdsds561-project-1/subscriptions/hw3nirbhgsutil-sub..
Received forbidden request from country: Iran
Error: Access is prohibited. Error 403
Received forbidden request from country: Sudan
Error: Access is prohibited. Error 403
```

Other than this we need a requirements.txt file so that everything can be configured properly and no errors are displayed. Contents of the requirements.txt file are as follows:

```
google-cloud-storage==2.11.0
google-cloud-logging==3.8.0
google-cloud-pubsub==2.18.4
google-auth==2.3.0
```

You may need to install google-cloud-logging, google-cloud-pubsub and google-oauth.

I have also made the topic public for anyone's access.

Also in the code I have mentioned key.json where I have provided the key with the gradescope which can be saved in a file key.json and then that can be used for making the following application run.

