

# Deploy API Gateways with Custom Domain for Amplitude

## Create proxy

```
gcloud api-gateway apis create amplitude-proxy --project=<PROJECT No>
```

```
1 API [apigateway.googleapis.com] not enabled on project [staging-266717]. Would you like to enable and retry
  (this will take a few minutes)? (y/N)? y
2
3 Enabling service [apigateway.googleapis.com] on project [staging-266717]...
4 Operation "operations/acat.p2-275922298701-d03da0c9-c7d2-4e3d-9020-f723cc86c079" finished successfully.
5 Waiting for API [amplitude-proxy] to be created...done.
```

```
gcloud api-gateway apis describe amplitude-proxy --project=<PROJECT No>
```

```
1 createTime: '2024-08-13T17:12:40.452026371Z'
2 displayName: amplitude-proxy
3 managedService: amplitude-proxy-3mweupqpmf8q7.apigateway.staging-266717.cloud.goog
4 name: projects/staging-266717/locations/global/apis/amplitude-proxy
5 state: ACTIVE
6 updateTime: '2024-08-13T17:14:20.402564667Z'
```

the `managedService` property. This value is used to enable your API in a subsequent step.

```
delete gcloud api-gateway apis delete amplitude-proxy --project=<PROJECT No>
```

## Create API Config

```
1 # openapi2-functions.yaml
2 swagger: '2.0'
3 info:
4   title: amplitude-proxy
5   description: Sample API on API Gateway with a Google Cloud Functions backend
6   version: 1.0.0
7 schemes:
8   - https
9 produces:
10  - application/json
11 paths:
12   /amplitude:
13     get:
14       summary: Greet a user
15       operationId: amplitude
16       x-google-backend:
17         address: https://api2.amplitude.com/
18       responses:
19         '200':
20           description: A successful response
21           schema:
22             type: string
```

```
gcloud api-gateway api-configs create amplitude-proxy-config --api=amplitude-proxy --openapi-spec=openapi2-
functions.yaml --project=<PROJECT No>
```

```
gcloud api-gateway api-configs describe amplitude-proxy-config --api=amplitude-proxy --project=<PROJECT No>
```

```
1 createTime: '2024-08-13T17:26:44.566124558Z'
2 displayName: amplitude-proxy-config
3 gatewayServiceAccount: projects/-/serviceAccounts/275922298701-compute@developer.gserviceaccount.com
4 name: projects/275922298701/locations/global/apis/amplitude-proxy/configs/amplitude-proxy-config
5 serviceConfigId: amplitude-proxy-config-2l75r4wszb53s
6 state: ACTIVE
7 updateTime: '2024-08-13T17:28:54.152035448Z'
```

```
deletion gcloud api-gateway api-configs delete amplitude-proxy-config --api=amplitude-proxy --project=<PROJECT No>
```

## Create Gateway

```
gcloud api-gateway gateways create amplitude-proxy-gw --api=amplitude-proxy --api-config=amplitude-proxy-config --
location=europe-west2 --project=<PROJECT No>
```

```
1 Waiting for API Gateway [amplitude-proxy-gw] to be created with
2 [projects/staging-266717/locations/global/apis/amplitude-proxy/configs/amplitude-proxy-config]
```

```
gcloud api-gateway gateways describe amplitude-proxy-gw --location=europe-west2 --project=<PROJECT No>
```

```
1 apiConfig: projects/275922298701/locations/global/apis/amplitude-proxy/configs/amplitude-proxy-config
2 createTime: '2024-08-13T17:38:19.488708370Z'
3 defaultHostname: amplitude-proxy-gw-3ir90g99.nw.gateway.dev
4 displayName: amplitude-proxy-gw
5 name: projects/staging-266717/locations/europe-west2/gateways/amplitude-proxy-gw
6 state: ACTIVE
7 updateTime: '2024-08-13T17:40:27.888244387Z'
```

Note the value of the `defaultHostname` property.

This is the hostname portion of the gateway URL you use to test your deployment in the next step

```
delete gcloud api-gateway gateways delete amplitude-proxy-gw --location=europe-west2 --project=<PROJECT No>
```

```
curl https://amplitude-proxy-gw-3ir90g99.nw.gateway.dev/amplitude < staging
```

```
curl https://amplitude-proxy-gw-3gdgzvge.nw.gateway.dev/amplitude < prod
```

<https://cloud.google.com/load-balancing/docs/ssl-certificates/google-managed-certs>

## Create SSL

This is what I did in console. A classic cert is what is used.

```
gcloud beta compute ssl-certificates create metrics-cert --project=full-stack-259515 --global --
description=Originally\ created\ for\ amplitude\ metrics --domains=staging-metrics.raft.ai,metrics.raft.ai
gcloud dns record-sets create staging-metrics.raft.ai --rrdatas=raft.ai --type=CNAME --ttl=300 --zone=raft.ai --
project=full-stack-259515
```

```
gcloud dns record-sets create metrics.raft.ai --rrdatas=raft.ai --type=CNAME --ttl=300 --zone=raft-ai --
project=full-stack-259515

gcloud dns record-sets create _acme-challenge.metrics.raft.ai --rrdatas=be600f52-2627-4b7e-948b-
e0986e8ebc92.8.authorize.certificatemanager.goog. --type=CNAME --ttl=300 --zone=raft-ai --project=full-stack-259515

gcloud dns record-sets create _acme-challenge.staging-metrics.raft.ai --rrdatas=f1fe8489-f861-4511-9dc0-
e85a7fd2691e.5.authorize.certificatemanager.goog. --type=CNAME --ttl=300 --zone=raft-ai --project=<PROJECT No>

gcloud beta certificate-manager certificates create metrics-cert --project=full-stack-259515 --location=global --
description="Originally created for Amplitude Metrics" --domains=staging-metrics.raft.ai,metrics.raft.ai --managed
```

## Create serverless network endpoint group

```
gcloud beta compute network-endpoint-groups create amplitude-proxy-neg --region=europe-west2 --network-endpoint-
type=serverless --serverless-deployment-platform=apigateway.googleapis.com --serverless-deployment-
resource=amplitude-proxy-gw
```

## Create Backend Service

```
gcloud compute backend-services create amplitude-proxy-backend --enable-logging --global --protocol=https --port-
name=http
```

## Add Serverless NEG to Backend

```
gcloud compute backend-services add-backend amplitude-proxy-backend --global --network-endpoint-group=amplitude-
proxy-neg --network-endpoint-group-region=europe-west2
```

## Create URL Map

```
gcloud compute url-maps create amplitude-proxy-url-map --default-service amplitude-proxy-backend
```

## Create HTTPS proxy

```
gcloud compute target-https-proxies create amplitude-proxy-https-proxy --url-map amplitude-proxy-url-map --ssl-
certificates staging-metrics-cert
```

## Fowarding rule

```
gcloud compute forwarding-rules create amplitude-proxy-forwarding-rule --target-https-proxy=amplitude-proxy-https-
proxy --global --ports=443
```

## CHECK

```
gcloud compute forwarding-rules describe amplitude-proxy-forwarding-rule --global
```

- 1 IPAddress: 34.107.166.42
- 2 IPProtocol: TCP

```
3 creationTimestamp: '2024-08-21T02:00:22.575-07:00'
4 description: ''
5 fingerprint: 1DxR4g_Rzuc=
6 id: '4640070390933623369'
7 kind: compute#forwardingRule
8 labelFingerprint: 42WmSpB8rSM=
9 loadBalancingScheme: EXTERNAL
10 name: amplitude-proxy-forwarding-rule
11 networkTier: PREMIUM
12 portRange: 443-443
13 selfLink: https://www.googleapis.com/compute/v1/projects/staging-266717/global/forwardingRules/amplitude-
    proxy-forwarding-rule
14 target: https://www.googleapis.com/compute/v1/projects/staging-266717/global/targetHttpsProxies/amplitude-
    proxy-https-proxy
```

```
1 IPAddress: 35.190.84.130
2 IPProtocol: TCP
3 creationTimestamp: '2024-08-21T02:28:03.709-07:00'
4 description: ''
5 fingerprint: JsDbLWCq3yQ=
6 id: '7208363428378316236'
7 kind: compute#forwardingRule
8 labelFingerprint: 42WmSpB8rSM=
9 loadBalancingScheme: EXTERNAL
10 name: amplitude-proxy-forwarding-rule
11 networkTier: PREMIUM
12 portRange: 443-443
13 selfLink: https://www.googleapis.com/compute/v1/projects/full-stack-259515/global/forwardingRules/amplitude-
    proxy-forwarding-rule
14 target: https://www.googleapis.com/compute/v1/projects/full-stack-259515/global/targetHttpsProxies/amplitude-
    proxy-https-proxy
```

gcloud compute target-https-proxies describe amplitude-proxy-https-proxy

```
1 creationTimestamp: '2024-08-21T01:51:25.436-07:00'
2 fingerprint: BEVlqUjR6G4=
3 id: '7983292579320435810'
4 kind: compute#targetHttpsProxy
5 name: amplitude-proxy-https-proxy
6 selfLink: https://www.googleapis.com/compute/v1/projects/staging-266717/global/targetHttpsProxies/amplitude-
    proxy-https-proxy
7 sslCertificates:
8 - https://www.googleapis.com/compute/v1/projects/staging-266717/global/sslCertificates/staging-metrics-cert
9 tlsEarlyData: DISABLED
10 urlMap: https://www.googleapis.com/compute/v1/projects/staging-266717/global/urlMaps/amplitude-proxy-url-map
```

```
1 creationTimestamp: '2024-08-21T02:27:36.820-07:00'
2 fingerprint: D4Ay2SFIwDA=
3 id: '5681226246519262695'
4 kind: compute#targetHttpsProxy
5 name: amplitude-proxy-https-proxy
6 quicOverride: NONE
7 selfLink: https://www.googleapis.com/compute/v1/projects/full-stack-
    259515/global/targetHttpsProxies/amplitude-proxy-https-proxy
8 sslCertificates:
9 - https://www.googleapis.com/compute/v1/projects/full-stack-259515/global/sslCertificates/metrics-cert
10 tlsEarlyData: DISABLED
```

```
11 urlMap: https://www.googleapis.com/compute/v1/projects/full-stack-259515/global/urlMaps/amplitude-proxy-url-  
map
```

```
gcloud compute url-maps describe amplitude-proxy-url-map
```

```
1 creationTimestamp: '2024-08-21T01:51:14.786-07:00'  
2 defaultService: https://www.googleapis.com/compute/v1/projects/staging-266717/global/backendServices/amplitude-  
proxy-backend  
3 fingerprint: 4ojBpZZhyFQ=  
4 id: '807707541280134253'  
5 kind: compute#urlMap  
6 name: amplitude-proxy-url-map  
7 selfLink: https://www.googleapis.com/compute/v1/projects/staging-266717/global/urlMaps/amplitude-proxy-url-map
```

```
1 creationTimestamp: '2024-08-21T02:25:21.957-07:00'  
2 defaultService: https://www.googleapis.com/compute/v1/projects/full-stack-  
259515/global/backendServices/amplitude-proxy-backend  
3 fingerprint: 9YLvs1pPfSk=  
4 id: '3548034329829969006'  
5 kind: compute#urlMap  
6 name: amplitude-proxy-url-map  
7 selfLink: https://www.googleapis.com/compute/v1/projects/full-stack-259515/global/urlMaps/amplitude-proxy-url-  
map
```

```
gcloud compute backend-services describe amplitude-proxy-backend --global
```

```
1 affinityCookieTtlSec: 0  
2 backends:  
3 - balancingMode: UTILIZATION  
4   capacityScaler: 1.0  
5   group: https://www.googleapis.com/compute/v1/projects/staging-266717/regions/europe-  
west2/networkEndpointGroups/amplitude-proxy-neg  
6 connectionDraining:  
7   drainingTimeoutSec: 0  
8 creationTimestamp: '2024-08-21T01:50:00.601-07:00'  
9 description: ''  
10 enableCDN: false  
11 fingerprint: nHuRGfgIvTo=  
12 id: '1314983564515218647'  
13 kind: compute#backendService  
14 loadBalancingScheme: EXTERNAL  
15 logConfig:  
16   enable: true  
17   optionalMode: EXCLUDE_ALL_OPTIONAL  
18   sampleRate: 1.0  
19 name: amplitude-proxy-backend  
20 port: 80  
21 portName: http  
22 protocol: HTTPS  
23 selfLink: https://www.googleapis.com/compute/v1/projects/staging-266717/global/backendServices/amplitude-  
proxy-backend  
24 sessionAffinity: NONE  
25 timeoutSec: 30  
26 usedBy:
```

```
27 - reference: https://www.googleapis.com/compute/v1/projects/staging-266717/global/urlMaps/amplitude-proxy-url-map
```

```
1 affinityCookieTtlSec: 0
2 backends:
3 - balancingMode: UTILIZATION
4   capacityScaler: 1.0
5   group: https://www.googleapis.com/compute/v1/projects/full-stack-259515/regions/europe-west2/networkEndpointGroups/amplitude-proxy-neg
6 connectionDraining:
7   drainingTimeoutSec: 0
8 creationTimestamp: '2024-08-21T02:23:06.903-07:00'
9 description: ''
10 enableCDN: false
11 fingerprint: tsN0PJ8ZrHk=
12 id: '6465833380413443861'
13 kind: compute#backendService
14 loadBalancingScheme: EXTERNAL
15 logConfig:
16   enable: true
17   optionalMode: EXCLUDE_ALL_OPTIONAL
18   sampleRate: 1.0
19 name: amplitude-proxy-backend
20 port: 80
21 portName: http
22 protocol: HTTPS
23 selfLink: https://www.googleapis.com/compute/v1/projects/full-stack-259515/global/backendServices/amplitude-proxy-backend
24 sessionAffinity: NONE
25 timeoutSec: 30
26 usedBy:
27 - reference: https://www.googleapis.com/compute/v1/projects/full-stack-259515/global/urlMaps/amplitude-proxy-url-map
```

```
gcloud beta compute network-endpoint-groups list
```

1	NAME	LOCATION	ENDPOINT_TYPE	SIZE
2	amplitude-proxy-neg	europe-west2	SERVERLESS	0

```
curl -v https://staging-metrics.raft.ai/amplitude
```

```
1 * Host staging-metrics.raft.ai:443 was resolved.
2 * IPv6: (none)
3 * IPv4: 34.107.166.42
4 * Trying 34.107.166.42:443...
5 * Connected to staging-metrics.raft.ai (34.107.166.42) port 443
6 * ALPN: curl offers h2,http/1.1
7 * (304) (OUT), TLS handshake, Client hello (1):
8 * CAfile: /etc/ssl/cert.pem
9 * CAPath: none
10 * (304) (IN), TLS handshake, Server hello (2):
11 * (304) (IN), TLS handshake, Unknown (8):
12 * (304) (IN), TLS handshake, Certificate (11):
13 * (304) (IN), TLS handshake, CERT verify (15):
14 * (304) (IN), TLS handshake, Finished (20):
```

```

15 * (304) (OUT), TLS handshake, Finished (20):
16 * SSL connection using TLSv1.3 / AEAD-CHACHA20-POLY1305-SHA256 / [blank] / UNDEF
17 * ALPN: server accepted h2
18 * Server certificate:
19 *   subject: CN=staging-metrics.raft.ai
20 *   start date: Aug 19 14:24:37 2024 GMT
21 *   expire date: Nov 17 15:05:02 2024 GMT
22 *   subjectAltName: host "staging-metrics.raft.ai" matched cert's "staging-metrics.raft.ai"
23 *   issuer: C=US; O=Google Trust Services; CN=WR3
24 *   SSL certificate verify ok.
25 * using HTTP/2
26 * [HTTP/2] [1] OPENED stream for https://staging-metrics.raft.ai/amplitude
27 * [HTTP/2] [1] [:method: GET]
28 * [HTTP/2] [1] [:scheme: https]
29 * [HTTP/2] [1] [:authority: staging-metrics.raft.ai]
30 * [HTTP/2] [1] [:path: /amplitude]
31 * [HTTP/2] [1] [user-agent: curl/8.7.1]
32 * [HTTP/2] [1] [accept: */*]
33 > GET /amplitude HTTP/2
34 > Host: staging-metrics.raft.ai
35 > User-Agent: curl/8.7.1
36 > Accept: */*
37 >
38 * Request completely sent off
39 < HTTP/2 400
40 < content-type: text/html; charset=utf-8
41 < access-control-allow-origin: *
42 < access-control-allow-methods: GET, POST
43 < access-control-max-age: 86400
44 < strict-transport-security: max-age=15768000
45 < x-cloud-trace-context: 6ba09b752d85451ff2e440255af084ed
46 < date: Wed, 21 Aug 2024 12:09:54 GMT
47 < server: Google Frontend
48 < content-length: 13
49 < via: 1.1 google
50 < alt-svc: h3=":443"; ma=2592000,h3-29=":443"; ma=2592000
51 <
52 * Connection #0 to host staging-metrics.raft.ai left intact
53 missing_event%

```

curl -v <https://metrics.raft.ai/amplitude>

```

1 * Host metrics.raft.ai:443 was resolved.
2 * IPv6: (none)
3 * IPv4: 35.190.84.130
4 *   Trying 35.190.84.130:443...
5 * Connected to metrics.raft.ai (35.190.84.130) port 443
6 * ALPN: curl offers h2,http/1.1
7 * (304) (OUT), TLS handshake, Client hello (1):
8 *   CAfile: /etc/ssl/cert.pem
9 *   CApath: none
10 * (304) (IN), TLS handshake, Server hello (2):
11 * (304) (IN), TLS handshake, Unknown (8):
12 * (304) (IN), TLS handshake, Certificate (11):
13 * (304) (IN), TLS handshake, CERT verify (15):
14 * (304) (IN), TLS handshake, Finished (20):
15 * (304) (OUT), TLS handshake, Finished (20):
16 * SSL connection using TLSv1.3 / AEAD-CHACHA20-POLY1305-SHA256 / [blank] / UNDEF
17 * ALPN: server accepted h2


```

```
18 * Server certificate:
19 *   subject: CN=metrics.raft.ai
20 *   start date: Aug 21 09:35:20 2024 GMT
21 *   expire date: Nov 19 10:23:30 2024 GMT
22 *   subjectAltName: host "metrics.raft.ai" matched cert's "metrics.raft.ai"
23 *   issuer: C=US; O=Google Trust Services; CN=WR3
24 *   SSL certificate verify ok.
25 * using HTTP/2
26 * [HTTP/2] [1] OPENED stream for https://metrics.raft.ai/amplitude
27 * [HTTP/2] [1] [:method: GET]
28 * [HTTP/2] [1] [:scheme: https]
29 * [HTTP/2] [1] [:authority: metrics.raft.ai]
30 * [HTTP/2] [1] [:path: /amplitude]
31 * [HTTP/2] [1] [user-agent: curl/8.7.1]
32 * [HTTP/2] [1] [accept: */*]
33 > GET /amplitude HTTP/2
34 > Host: metrics.raft.ai
35 > User-Agent: curl/8.7.1
36 > Accept: */*
37 >
38 * Request completely sent off
39 < HTTP/2 400
40 < content-type: text/html;charset=utf-8
41 < access-control-allow-origin: *
42 < access-control-allow-methods: GET, POST
43 < access-control-max-age: 86400
44 < strict-transport-security: max-age=15768000
45 < x-cloud-trace-context: 27f8debe7ca9157ea1036e3b161037d3
46 < date: Wed, 21 Aug 2024 12:07:44 GMT
47 < server: Google Frontend
48 < content-length: 13
49 < via: 1.1 google
50 < alt-svc: h3=":443"; ma=2592000,h3-29=":443"; ma=2592000
51 <
52 * Connection #0 to host metrics.raft.ai left intact
53 missing_event%
```

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 [Message from Stephen Agius in #team-devops](#) <https://console.cloud.google.com/artifacts/docker/staging-266717/europe-west2/nginx-amplitude-proxy/nginx-amplitude-proxy>