GUIDE - serve your domain (e.g. machinelearning.000.pe) from a GCP bucket

To configure your static website with a custom domain, e.g. "machinelearning.000.pe", mostly using only CLI commands, including `gsutil` and `gcloud`, follow these steps.

0. Verify Domain Ownership with Google

https://search.google.com/search-console/

See sub-guide for that.

At the DNS tool of your DNS provider, create a CNAME record "go" to "c.storage.googleapis.com"

In your gcloud environemnt, set a project with a valid billing account. gcloud config set project <your project id>

Example: gcloud config set project prj-id-am-test-240312

1. Create a Bucket, with name based on your domain name

Create the bucket:

gsutil mb -p <project id> -c STANDARD -l <location> -b on gs://go.<your domain>

Example: gsutil mb -p prj-id-am-test-240312 -c STANDARD -l us-east1 -b on gs://go.machinelearning.000.pe

If you did NOT do step 0, it will fail with a 403 error.

2. Make the Bucket Publicly Accessible

gsutil iam ch allUsers:objectViewer gs://go.<your domain>

Example: gsutil iam ch allUsers:objectViewer gs://go.machinelearning.000.pe

This command allows public access to the objects within your bucket.

3. Create and upload files to your Website

For example, working oon the Google Cloud shell, or wherever you can issue gcloud commands: mkdir site cd site touch index.html touch 404.html Edit index.html in the Cloud Shell editor, save. Edit 404.html in the Cloud Shell editor, save. Use the following command to upload content: gsutil -m cp -r ./ gs://go.<your domain> Example:

gsutil -m cp -r ./ gs://go.machinelearning.000.pe

4. Set Main and Error Pages for the Website

gsutil web set -m index.html -e 404.html gs://go.<your domain>

Example: gsutil web set -m index.html -e 404.html gs://go.machinelearning.000.pe

This sets `index.html` as the **main page** and `404.html` as the **error page**.

5. That is it, for HTTP!

From now on, you can visit your domain and the static website should work via HTTP (only).

http://go.machinelearning.000.pe/

6. Adding SSL + HTTPS support

HTTPS requires a load balancer and a SSL certificate.

At some stage, you might be prompted to enable the "Compute Engine API" - do it, it the prompt dialog appears.

6.1. Create a new SSL certificate

```
Note:
In the end, this will probably NOT work if you can't edit DNS records of type A.
But you can execute all the steps and understand all the parts.
Create a new SSL certificate:
gcloud compute ssl-certificates create <your cert name> \
            --domains=<your domain>,go.<your domain> \
            --global
For example:
gcloud compute ssl-certificates create cert-ml-000-pe \
            --domains=go.machinelearning.000.pe \
            --global
```

6.2. Get a new static IP address

Reserve a static IP for the domain, via gcloud: gcloud compute addresses create <name-for-the-ip> --project=<project id> --global

For example: <mark>gcloud compute addresses create ip-for-machinelearning-000-pe --project=prj-id-am-test-240312 --global</mark>

6.3 Create a "load balancer"

Search and pick "load balancing".

=	Google Cloud	*	Testing 240312 🔻	load	load balancing X Q Search				
	VPC network		VPC networks	SEAR	CH RESULTS				
8	VPC networks		NETWORKS IN CURF	æ	Load balancing Network services				

Pick "create load balancer".

≡	Google Cloud		Testing 240312 🔻	load balancing		
孟	Network services	д	Load balancing	+ CREATE LOAD BALANCI		
A	Load balancing		LOAD BALANCERS	BACKENDS	FRONTENDS	

Choose (5 steps):

- "Application load balancer (http/https)"
- "Public facing (external)"
- "Best for global workloads"
- "Global external application load balancer"
- "Create load balancer"

Create a load balancer

1 Type of load balancer



Network Load Balancer (TCP/UDP/SSL)

Choose a Network Load Balancer when you need TLS offloading at scale, support for UDP, and exposing IP addresses to your applications.



Public facing or internal

Public facing (external)

Global or single region deployment

Global workloads

4 Load balancer generation

Global external Application Load Balancer

G Create load balancer

CONFIGURE CANCEL

Create a load balancer

Ype of load balancer

Application Load Balancer

2 Public facing or internal



Global or single region deployment

Global workloads

4 Load balancer generation

Global external Application Load Balancer

G Create load balancer

CONFIGURE CANCEL

4

Type of load balancer

Application Load Balancer

Public facing or internal

Public facing (external)

3 Global or single region deployment



- Load balancer generation
- Global external Application Load Balancer

6 Create load balancer

Create a load balancer

Type of load balancer

Application Load Balancer

Public facing or internal
 Public facing (external)

Public facing (external)

Global or single region deployment

Global workloads

4 Load balancer generation

Global external Application Load Balancer
Load balancer with EXTERNAL_MANAGED load
balancing scheme (Recommended)



Classic Application Load Balancer Previous generation load balancer with EXTERNAL load

0





Create load balancer

5

← Create a load balancer

6.3. Configure the "load balancer"

6.3.1. Do the frontend configuration

- Give the frontend a name
- Choose HTTPS
- Pick the static IP address previously created
- Pick the certificate previously created
- Click "done".

б

Frontend configuration

Configure the load balancer's frontend IP address, port, and protocol. Configure an SSL ce

(Leee	
fe-ml-000-pe	
Lowercase, no spaces.	
Description	
Protocol	
HTTPS (includes HTTP/2 and F	HTTP/3)
Select HTTPS to support clients to automatically offers HTTP/2 as p	hat support HTTP/2. The load balancer art of the TLS handshake.
etwork Service Tier	
ohal UTTD/S) load balancing only	comparts the Dramium Natwork Carvise tier
ern more	supports the Premium Network Service tier.
IP version	IP address
IPv4	▼ ip-for-machinelearning-000-pe
Port *	
443	
Application load balancing suppo	rts all TCP ports. Learn more 🗹
Contificate t	
cert.ml.000.po	- (
cert-m-000-pe	
сентничностре	
ADDITIONAL CERTIFICATES	
ADDITIONAL CERTIFICATES	
ADDITIONAL CERTIFICATES SSL policy * GCP default	
ADDITIONAL CERTIFICATES SSL policy * GCP default	
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation	•
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation Automatic (default)	•
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation Automatic (default)	
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation Automatic (default) Enable HTTP to HTTPS redir Requires a reserved external IP	ect
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation Automatic (default) Enable HTTP to HTTPS redir Requires a reserved external IP automatically generates a sepa	ect Paddress. Enabling HTTP to HTTPS redirect arate URL map with the HTTP to HTTPS redirection
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation Automatic (default) Enable HTTP to HTTPS redir Requires a reserved external IP automatically generates a sepa configuration.	ect Paddress. Enabling HTTP to HTTPS redirect arate URL map with the HTTP to HTTPS redirection
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation Automatic (default) Enable HTTP to HTTPS redir Requires a reserved external IP automatically generates a sepa configuration.	ect P address. Enabling HTTP to HTTPS redirect arate URL map with the HTTP to HTTPS redirection
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation Automatic (default) Enable HTTP to HTTPS redir Requires a reserved external IP automatically generates a sepa configuration. HTTP keepalive timeout	ect P address. Enabling HTTP to HTTPS redirect arate URL map with the HTTP to HTTPS redirection secon
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation Automatic (default) Enable HTTP to HTTPS redir Requires a reserved external IP automatically generates a sepa configuration. HTTP keepalive timeout The time an idle client connection	ect P address. Enabling HTTP to HTTPS redirect arate URL map with the HTTP to HTTPS redirection secon is kept open by the load balancer. Learn more [2]
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation Automatic (default) Enable HTTP to HTTPS redir Requires a reserved external IP automatically generates a sepa configuration. HTTP keepalive timeout The time an idle client connection	ect P address. Enabling HTTP to HTTPS redirect arate URL map with the HTTP to HTTPS redirection second
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation Automatic (default) Enable HTTP to HTTPS redir Requires a reserved external IP automatically generates a sepa configuration. HTTP keepalive timeout The time an idle client connection SHOW LESS	ect P address. Enabling HTTP to HTTPS redirect arate URL map with the HTTP to HTTPS redirection second second
ADDITIONAL CERTIFICATES SSL policy * GCP default HTTP/3 (QUIC) negotiation Automatic (default) I Enable HTTP to HTTPS redir Requires a reserved external IP automatically generates a sepa configuration. HTTP keepalive timeout The time an idle client connection SHOW LESS	ect P address. Enabling HTTP to HTTPS redirect arate URL map with the HTTP to HTTPS redirection second

6.3.2 Do the backend configuration

Make sure to create a new "backend bucket"

Covercase, no spaces. Create or select a backend service for incoming traffic. You can add multiple backend services and backend buckets to serve different types of content. Prontend configuration Backend configuration Routing rules	Load Balancer name *	Backend configuration
P Frontend configuration Content. Backend configuration	owercase, no spaces.	Create or select a backend service for incoming traffic. You can add multiple backend services and backend buckets to serve different types of
Backend configuration Review and finalize (optional) Review and finalize (optional) Beckend buckets Backend buckets Backend buckets	Frontend configuration	content.
Review and finalize (optional)	Reckend configuration	Backend services & backend buckets
Review and finalize (optional) Review and finalize (optional) Bedrand bucket Bedrand bucket	Backend configuration	Tilter Type to filter
Review and finalize (optional) Be-atrice-zapto-org Backend bucket be-final Bedenat Bedenat Bedenat	 Routing rules 	
Bebnart Backend bucket	Review and finalize (optional)	Backend bucket
		Backend bucket



Browse and select the correct "go.*" bucket for the project.

Name the backend bucket, then press create.

Confirm with "OK".

6.3.3 Complete the load balancer creation

Choose a name for the load balancer (e.g. "lb-ml-000-pe"), press create.

6.3.4 Wait

The configuration might take a few minutes to complete.

Above all, the SSL certificate might ~24 hours to propagate.

But, with a free DNS service where you probably can NOT edit DNS records of type A (you would link the domain name to the static IP adress created earlier), the "provisioning" of the certificate will probably fail and HTTPS will never work.

If you could edit DNS records of type A, the provisioning would complete and https would work.

Sub-guide: verify Domain Ownership with Google

This page and snapshots illustrate the adding of a domain "property" to a Google Cloud account of yours. The idea is to prove that you own a domain name, so you can do things with it in the Google Cloud. For example, so you can host a static website on a bucket named after your domain name.

Start by visiting:

https://search.google.com/search-console/

In this example I am trying to add "machinelearning.000.pe".

This is free domain name from infinityfree.com, one of the rare free services that will allow you to edit the required DNS records.

Select property type		
All URLs across all subdomains (m., www) All URLs across https or http Requires DNS verification Machinelearning.000.pe Enter domain or subdomain	or	URL prefix 0 Only URLs under entered address 0 Only URLs under specified protocol Allows multiple verification methods https://www.example.com Enter URL
		LEARN MORE CANCEL

TXT records will NOT work with infinityfree.com



So, pick validation via CNAME records:

Verify domain ownership via DNS record machinelearning.000.pe							
Select record type: CNAME Learn more							
2 Sign in to your domain name provider (e.g. godaddy.com or namecheap.com)							
3 Copy the CNAME record below into the DNS configuration for machinelearning.000.pe							
CNAME Label / Host: b3vw4ptsywy5 COPY							
CNAME Destination / gv-ouhznlgr2an674.dv.googlehosted.com COPY Target:							
4 Press verify below							
Note: DNS changes may take some time to apply. If Search Console doesn't find the record immediately, wait a day and then try to verify again Learn more							
Can't verify via Domain name provider? For more verification methods, try a URL prefix property instead							
BACK VERIFY LATER VERIFY							

Enter the CNAME label + target at a **NEW CNAME DNS RECORD** at infinityfree.com You'll need to know your account ID and your domain name. URLs will be like: <u>https://dash.infinityfree.com/accounts/<account</u> id here>/edit https://dash.infinityfree.com/accounts/<account id here>/dnsRecords

The direct URL for editing the DNS records of some domain name is: https://dash.infinityfree.com/accounts/<account id here>/domains/<domain name here>/dnsRecords

Manage if0_36510912	Add CNAME Record				
Account Options	Name				
合 Home	b3vw4ptsywy5	.machinelearning.000.pe			
Upgrade to Premium	Enter a subdomain to set up a domain level alias. Target				
(Statistics	gv-ouhznlgr2an674.dv.googlehosted.com				
Domains	The hostname which your CNAME record should point to.				
FTP Details	← Back	+ Create CNAME Record			

The CNAME record for machinelearning 000 pe has been created!						
Don't see your website yet? Please note that it can take up to 7:	2 hours for a new domain name or hosting accoun	t to start worki	ng everywhere. Learn more.			
Manage if0_36510912	DNS Records + Add Record					
Account Options	DOMAIN	TYPE	TARGET	ACTIONS		
合 Home	machinelearning.000.pe	А	185.27.134.217			
Upgrade to Premium	www.machinelearning.000.pe	А	185.27.134.217			
	b3vw4ptsywy5.machinelearning.000.pe	CNAME	gv-ouhznlgr2an674.dv.googlehosted.cor	to Delete		
() Statistics	← Back					

The validation will take 2, 3 minutes. While the DNS propagation happens, you'll get something like:



We found this DNS CNAME record instead:

• 11776.BODIS.com.

Sometimes DNS changes can take a while to appear. Please wait a few hours, then reopen your property in Search Console. If verification fails again, try adding a different DNS CNAME record.

Please fix your implementation and reverify, or use another verification method. Learn more

OK

When the DNS propagation completes, you'll have success:

✓ Ownership verified

Verification method: Domain name provider

To stay verified, don't remove the DNS-CNAME record. To avoid losing verification, you may want to add multiple verification methods from the **Settings > Ownership verification**.

DONE GO TO PROPERTY

list static IPs
gcloud compute addresses list

gcloud compute addresses delete <ip name> --global

observe certificates
gcloud compute ssl-certificates describe [CERTIFICATE_NAME] --global

list certificates
gcloud compute ssl-certificates list

delete a certificate
gcloud compute ssl-certificates delete [CERTIFICATE_NAME] --global