

Creating Firewall Rules

1. In the left pane, clic **VPC Network -> Firewall Rules**.
2. Specify the following:

Property	Value
Name	Allow-my-group
Network	Default
Priority	1000
Direction	Ingress
Action On Match	Allow
Target	All Instances
Source filter	IP Ranges
Source IP ranges	0.0.0.0/0
Second source filter	None
Protocols and ports	tcp:8080

Resolution:

Using the **gcloud cli**

```
gcloud compute firewall-rules create allow-my-group --network=default  
--priority=1000 --direction=Ingress --source-ranges=0.0.0.0/0 --allow tcp:8080
```

Creating firewall...done.

NAME	NETWORK	DIRECTION	PRIORITY	ALLOW	DENY	DISABLED
allow-my-group	default	INGRESS	1000	tcp:8080		False

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Firewall + CREATE FIREWALL RULE REFRESH CONFIGURE LOGS DELETE

Firewall rules control incoming or outgoing traffic to an instance. By default, incoming traffic from outside your network is blocked. [Learn more](#)

Note: App Engine firewalls are managed [here](#).

Filter table

<input type="checkbox"/>	Name	Type	Targets	Filters	Protocols / ports	Action	Priority	Network	↑	Logs	
<input type="checkbox"/>	allow-my-group	Ingress	Apply to all	IP ranges: 0.0.0.0/0	tcp:8080	Allow	1000	default		Off	▼

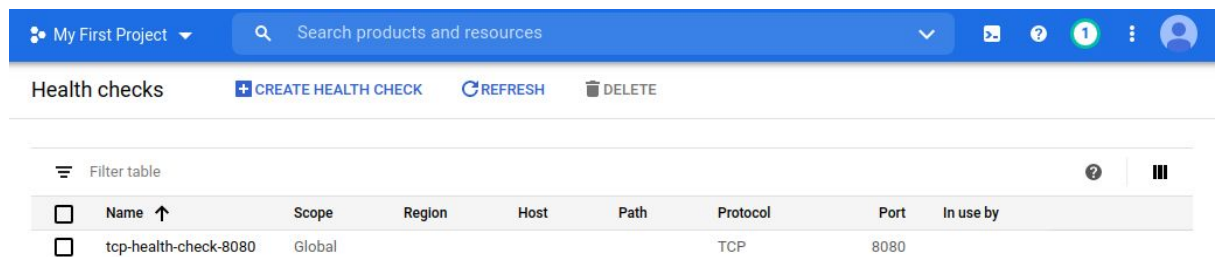
Creating Health Check

3. In the left pane, clic **Compute Engine -> Health checks**.
4. Clic **Create Health checks for HTTP or HTTPS**.
5. Specify the following step if you need create TCP health check:

```
gcloud compute health-checks create tcp tcp-health-check-8080 --port=8080
```

Resolution:

```
gonzalo@mix:~/Globant/mentoring-gcp$ gcloud compute health-checks create
tcp tcp-health-check-8080 --port=8080
Created
[https://www.googleapis.com/compute/v1/projects/tonal-plasma-292323/global/hea
lthChecks/tcp-health-check-8080].
NAME                PROTOCOL
tcp-health-check-8080 TCP
gonzalo@mix:~/Globant/mentoring-gcp$
```



Name	Scope	Region	Host	Path	Protocol	Port	In use by
tcp-health-check-8080	Global				TCP	8080	

Creating Template Instance

6. In the left pane, clic **Compute Engine -> Instance Template**.
7. Clic **Create Instance Template**.
8. Specify the following:

Property	Value (type value or select option as specified)
Name	instance-template-test
Machine Type	Select “small” or “micro”
Image	Ubuntu 18
Identity and API access	Allow default access
Firewall	Checks HTTP and HTTPS

Script startup	<pre> #!/bin/bash echo "[1/5] Updating system..." sudo apt-get update echo "[2/5] Installing Java 8..." sudo apt-get -y install openjdk-8-jre-headless cd /opt echo "[3/4] Creating services folder" sudo mkdir services cd services echo "[4/5] Downloading app..." sudo wget http://github.com/RogelioDavid/apps/raw/master/app.jar echo "[5/5] Running app..." java -DAPP_ENV=gcp -jar app.jar > \${HOME}/logs.log & </pre>
----------------	---

4. click **Create**.

Resolution:

First I will create a Firewall to allow HTTP (TCP 80) and HTTPS (TCP 443)

```

gonzalo@mix:~/Globant/mentoring-gcp$ gcloud compute firewall-rules create
mentoring-rule --allow tcp:443,tcp:80 --source-tags=mentoring,roger
Creating firewall...: Created
[https://www.googleapis.com/compute/v1/projects/tonal-plasma-292323/global/fire
walls/mentoring-rule].
Creating firewall...done.
NAME          NETWORK DIRECTION PRIORITY ALLOW      DENY
DISABLED
mentoring-rule default INGRESS   1000    tcp:443,tcp:80  False
gonzalo@mix:~/Globant/mentoring-gcp$

```

Now I will create the file script as

```

#!/bin/bash
sudo add-apt-repository -y ppa:webupd8team/java
sudo apt-get install -y software-properties-common debconf-utils
sudo apt-get update
sudo echo "oracle-java8-installer shared/accepted-oracle-license-v1-1 select true" |
sudo debconf-set-selections

```

```
sudo apt-get install -y oracle-java8-installer
cd /opt
sudo mkdir services
cd services
sudo wget http://github.com/RogelioDavid/apps/raw/master/app.jar
java -DAPP_ENV=gcp -jar app.jar > /opt/logs.log &
```

Finally, I will create the template running

```
gonzalo@mix:~/Globant/mentoring-gcp$ gcloud compute instance-templates
create instance-template-test --machine-type=e2-micro
--image-project=ubuntu-os-cloud --image=ubuntu-1804-bionic-v20200923
--tags=mentoring,roger --metadata-from-file startup-script=./startup.sh
Created
[https://www.googleapis.com/compute/v1/projects/tonal-plasma-292323/global/inst
anceTemplates/instance-template-test].
NAME                MACHINE_TYPE  PREEMPTIBLE  CREATION_TIMESTAMP
instance-template-test  e2-micro      2020-10-11T17:22:26.846-07:00
gonzalo@mix:~/Globant/mentoring-gcp$
```

Results

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← Firewall rule details

EDIT

DELETE

mentoring-rule

Logs ?

Off

view

Network

default

Priority

1000

Direction

Ingress

Action on match

Allow

Source filters

Tags

mentoring

roger

Protocols and ports

tcp:443

tcp:80

Enforcement

Enabled

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Search products and resources

?

2

Instance templates

CREATE INSTANCE TEMPLATE

REFRESH

COPY

SHOW INFO PANEL

LEARN

Filter instance templates

Columns

<input type="checkbox"/> Name ^	Machine type	Image	Disk type	Placement policy	In use by	Creation time
<input type="checkbox"/> instance-template-test	2 vCPUs, 1 GB	ubuntu-1804-bionic-v20200923	Standard persistent disk	No policy		Oct 11, 2020, 9:22:26 PM

Creating Instance Groups

1. In the left pane, clic **Compute Engine -> Instance Groups**.
2. Click **Create Instance Groups**.
3. Specify the following:

Property	Value (type value or select option as specified)
----------	--

Name	instance-group-test
Location	Single Zone
Region	<SELECTED ZONE WITH LESS LATENCY ACORDING YOUR ZONE>
Zone	<SELECTED ZONE WITH NEWER LETTER>
Group Type	Managed Instance group
Instance template	Instance template Test
AutoScaling	On
Autoscale based on	% CPU
Target CPU usage	60
Minimum number of instances	1
Maximum number of instances	6
Cool-down period	60
Health check	<HEALTH CHECK CREATED>

Resolution:

First, I will create the Instance Group (Managed type)

```
gonzalo@mix:~/Globant/mentoring-gcp$ gcloud compute instance-groups
managed create instance-group-test --zone=southamerica-east1-c
--template=instance-template-test --health-check=tcp-health-check-8080 --size=1
Created
[https://www.googleapis.com/compute/v1/projects/tonal-plasma-292323/zones/sout
hamerica-east1-c/instanceGroupManagers/instance-group-test].
NAME          LOCATION          SCOPE  BASE_INSTANCE_NAME  SIZE
TARGET_SIZE  INSTANCE_TEMPLATE  AUTOSCALED
instance-group-test southamerica-east1-c zone  instance-group-test 0   1
instance-template-test no
gonzalo@mix:~/Globant/mentoring-gcp$
```

Then, I will create an Auto scaling for this instance group

```
gonzalo@mix:~/Globant/mentoring-gcp$ gcloud compute instance-groups
managed set-autoscaling instance-group-test --zone=southamerica-east1-c
--scale-based-on-cpu --target-cpu-utilization=0.6 --min-num-replicas=1
--max-num-replicas=6 --cool-down-period=60 --mode=on
Created
```

```
[https://www.googleapis.com/compute/v1/projects/tonal-plasma-292323/zones/southamerica-east1-c/autoscalers/instance-group-test-xfxr].
```

```
---
```

```
autoscalingPolicy:
```

```
  coolDownPeriodSec: 60
```

```
  cpuUtilization:
```

```
    utilizationTarget: 0.6
```

```
  maxNumReplicas: 6
```

```
  minNumReplicas: 1
```

```
  mode: ON
```

```
creationTimestamp: '2020-10-11T18:10:32.059-07:00'
```

```
id: '3537780098779190247'
```

```
kind: compute#autoscaler
```

```
name: instance-group-test-xfxr
```

```
selfLink:
```

```
https://www.googleapis.com/compute/v1/projects/tonal-plasma-292323/zones/southamerica-east1-c/autoscalers/instance-group-test-xfxr
```

```
status: ACTIVE
```

```
target:
```

```
https://www.googleapis.com/compute/v1/projects/tonal-plasma-292323/zones/southamerica-east1-c/instanceGroupManagers/instance-group-test
```

```
zone:
```

```
https://www.googleapis.com/compute/v1/projects/tonal-plasma-292323/zones/southamerica-east1-c
```

```
zone:
```

```
https://www.googleapis.com/compute/v1/projects/tonal-plasma-292323/zones/southamerica-east1-c
```

```
zone:
```

```
gonzalo@mix:~/Globant/mentoring-gcp$
```

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Search products and resources								
Instance groups								
CREATE INSTANCE GROUP REFRESH DELETE LEARN								
Instance groups are collections of VM instances that use load balancing and automated services, like autoscaling and autohealing. Learn more								
Filter resources								
Columns								
Name	Zone	Instances	Template	Group type	Creation time	Recommendation	Autoscaling	In use by
instance-group-test	southamerica-east1-c	1	instance-template-test	Managed	Oct 11, 2020, 10:00:12 PM		On: Target CPU utilization 60%	

Creating Load Balancer

1. In the left pane, click **Network Services -> Load Balancing**.
2. Click **Create Load Balancer**.
3. Selected TCP Load Balancing -> Start
4. In Internet facing or internal only Option Internet facing or internal only
5. in Multiple regions or single regions - Single region only
6. in Connection termination - No (TCP)
7. Specify the following:

Property	Value (type value or select option as specified)
Name	Load-balancer-test
Location	Single Zone
Backend configuration	<ul style="list-style-type: none">- Check same name- Region -> same region with creating Instance group- Selected Instance Group already create- Health check -> select Health check already create
Frontend configuration	<ul style="list-style-type: none">- For Each port<ul style="list-style-type: none">- Add name- Network Service Tier: Premium- IP: Ephemeral- Port: your port

Resolution:

First I will create another Health Check, for any reason (unkown for me) the console doesn't let me take a created health check

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Health checks

CREATE HEALTH CHECK

REFRESH

DELETE

Filter table

<input type="checkbox"/>	Name ↑	Scope	Region	Host	Path	Protocol	Port	In use by
<input type="checkbox"/>	load-balancer-hc (legacy)	Global			/ms-product/v1/actuator/health	HTTP	8080	load-balancer-test

Now I will create the Load Balancer for this Health Check

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Load balancer details

EDIT DELETE

load-balancer-test

Frontend

Protocol	IP:Port	Network Tier
TCP	34.95.255.56:8080	Premium

Backend

Name: **load-balancer-test** Region: **southamerica-east1** Session affinity: **None** Health check: **load-balancer-hc** Backup pool: **back-pool** Failover ratio: **10%**

Instance group

instance-group-test

Instances	Zone	34.95.255.56
instance-group-test-bq65	southamerica-east1-c	✓
instance-group-test-zh94	southamerica-east1-c	✓
instance-group-test-flbb	southamerica-east1-c	✓
instance-group-test-4gs4	southamerica-east1-c	✓

Finally I will checkout the Application through Load Balancer

<http://34.95.255.56:8080/ms-product/v1/actuator/health>

```
→ ↻ ⚠ Not secure | 34.95.255.56:8080/ms-product/v1/actuator/health

// 20201012003931
// http://34.95.255.56:8080/ms-product/v1/actuator/health

{
  "status": "UP"
}
```

```
← → ↻ ⚠ Not secure | 34.95.255.56:8080/ms-product/v1/products/all
1 // 20201012004332
2 // http://34.95.255.56:8080/ms-product/v1/products/all
3
4 ▼ [
5 ▼ {
6   "idProduct": 1,
7   "description": "Primer Libro",
8   "stock": 100,
9   "paidForView": false
10  },
11 ▼ {
12   "idProduct": 2,
13   "description": "Libro Para Estudio",
14   "stock": 200,
15   "paidForView": true
16  }
17 ]
```