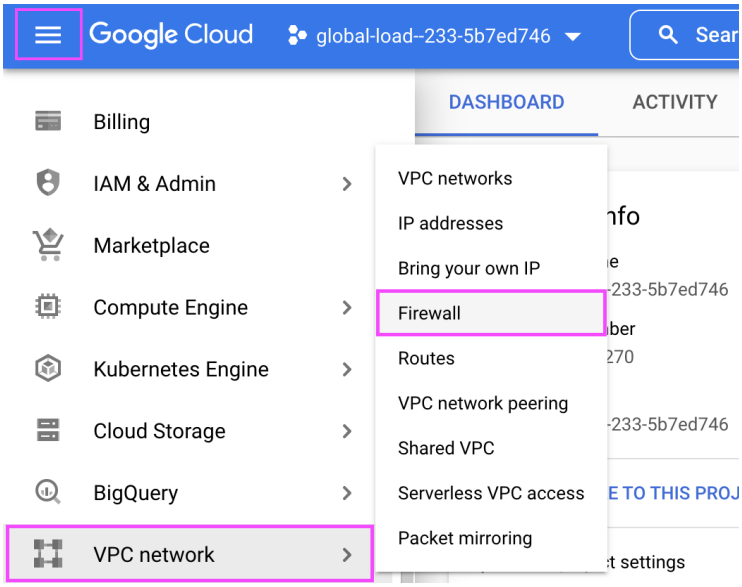
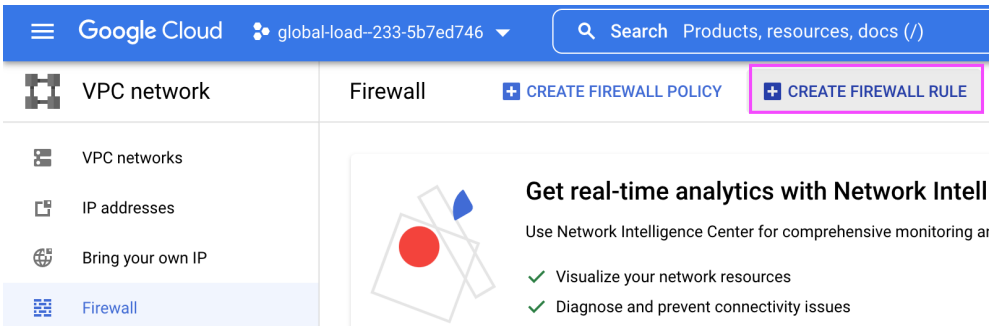
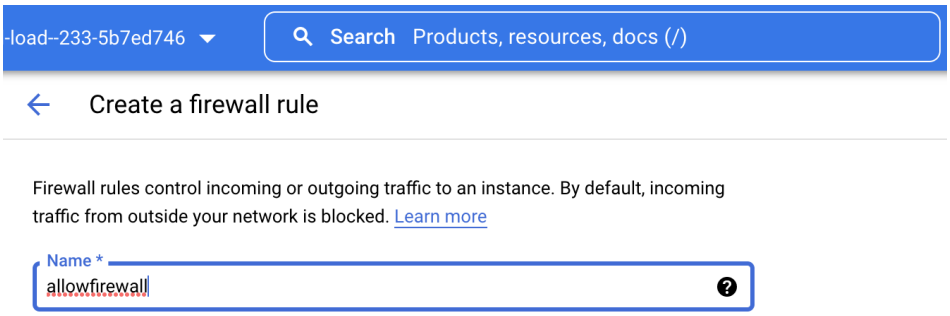
1. Set up the firewall rule
    a. Select “VPC Network” from the GC menu
    b. “Firewall”



    c. “Create Firewall Rule”

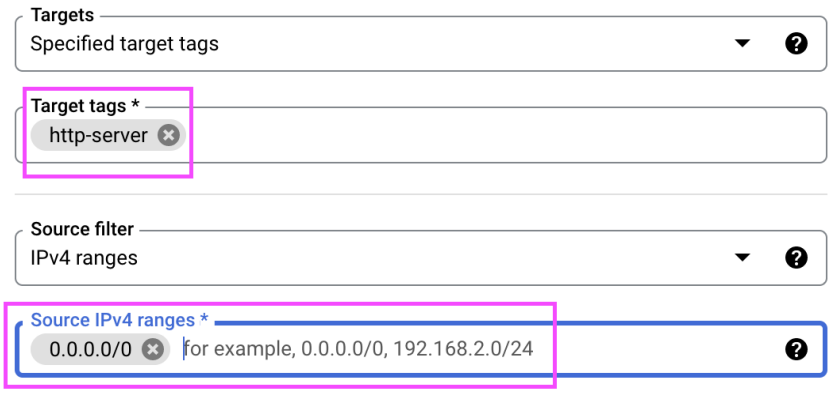


        i. Assign firewall rule a name for incoming and outgoing traffic to an instance



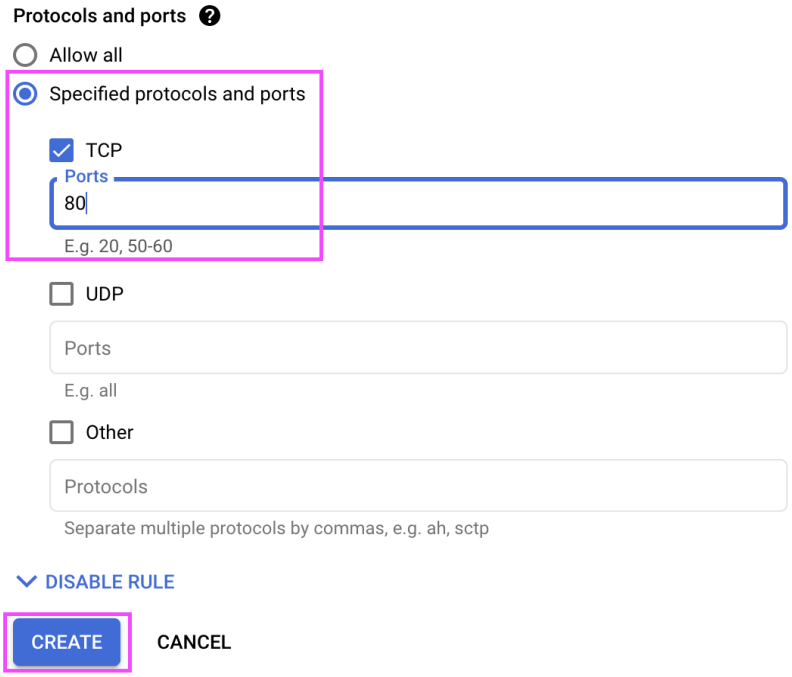
        ii. Scroll down, and give “target tag” a name tag, meaning that the firewall rule will apply to any VM that has this tag. I use the tag: http-server

iii. For “source IP ranges” enter 0.0.0.0/0, which means the entire internet

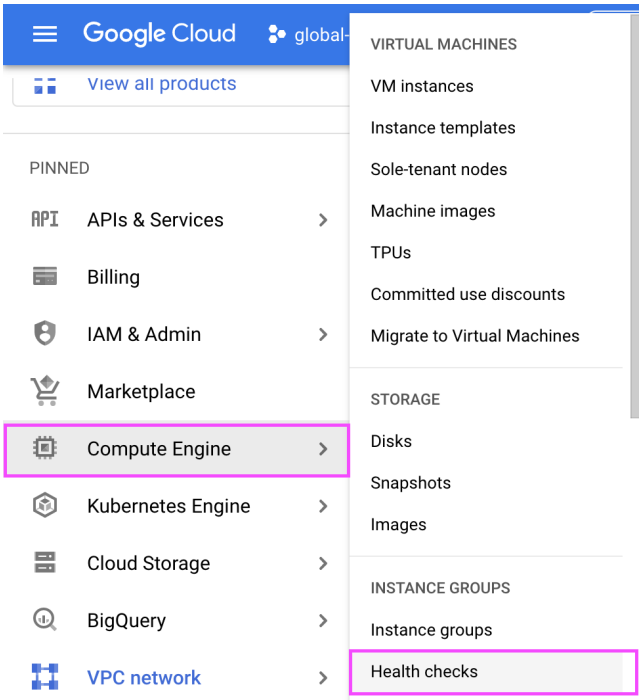


iv. Under “Protocols and ports” select “Specified protocols and ports”; checkmark box next to “TCP”, and in the “ports” section besides it enter “80”

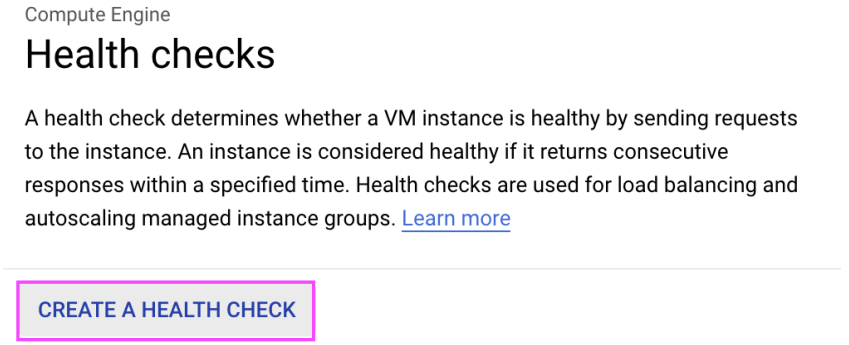
v. Click “Create”



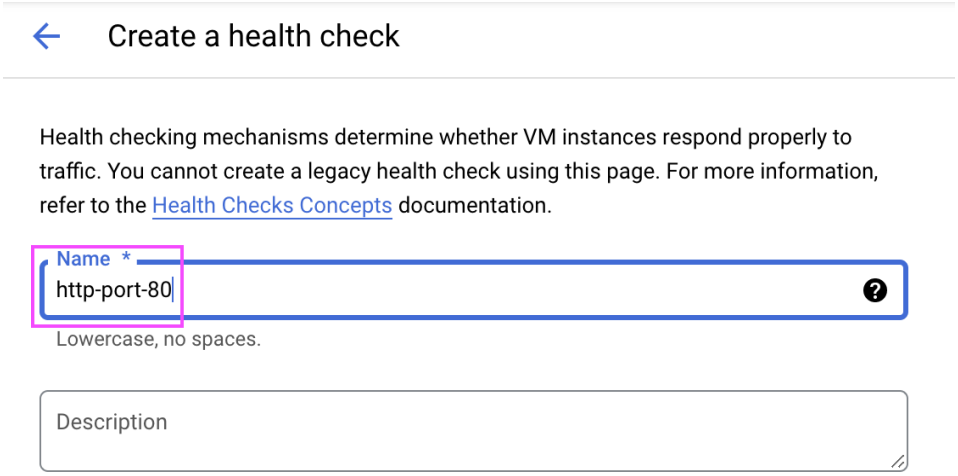
2. Set up the http health check
    a. Select “Compute Engine” from the top left menu corner
    b. Click “Health Checks”



c. “Create Health Check”

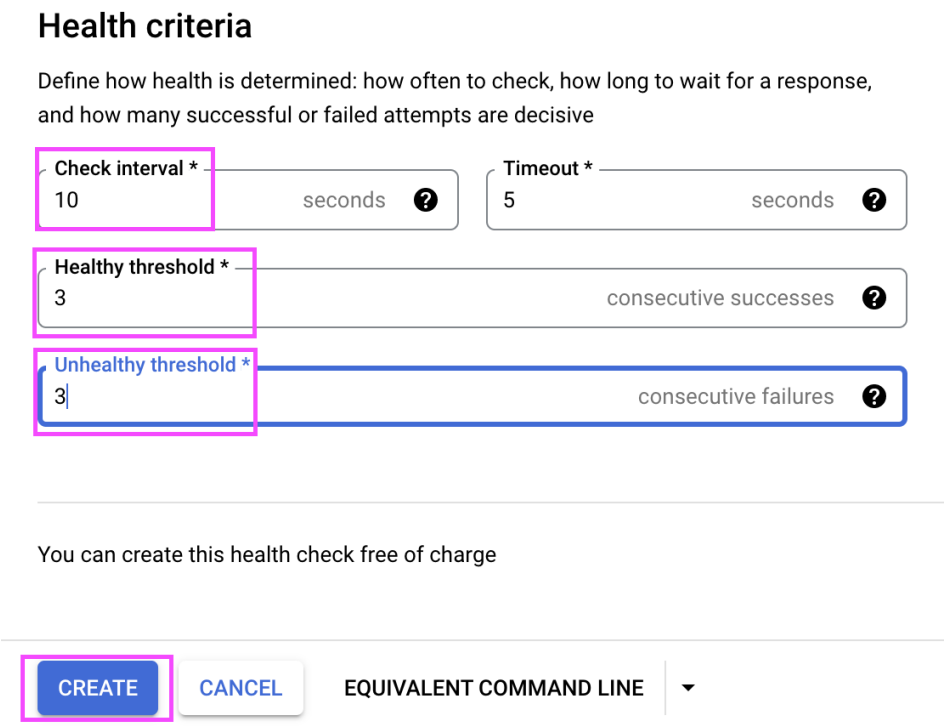


i. Name the health check; ex: http-port-80

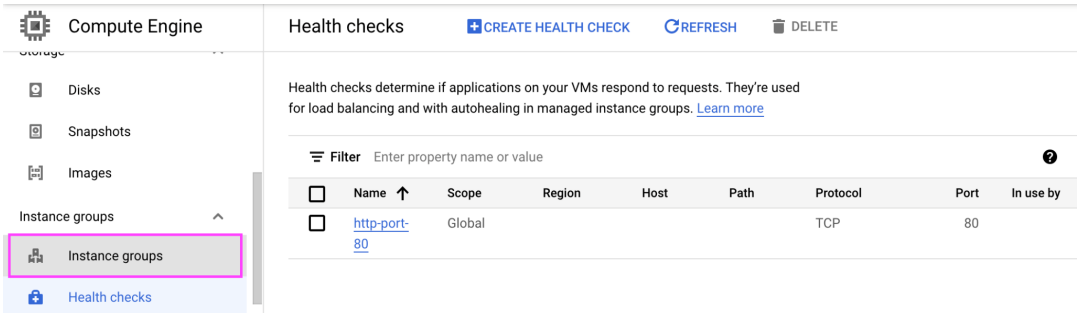


ii. Under “Health criteria” change “check interval” to “10”; and change both “healthy threshold” & “unhealthy threshold” to “3”

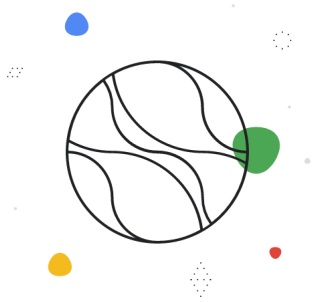
iii. Click “Create”



3. Create the instance template and managed instance group
   a. “Compute Engine” option from menu
   b. “Instance Groups”



   c.
   d. “Create Instance Group”

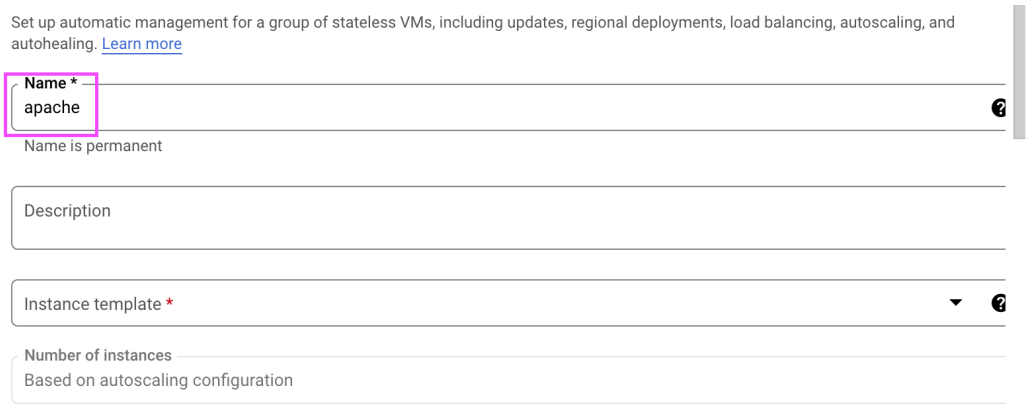


Instance Groups

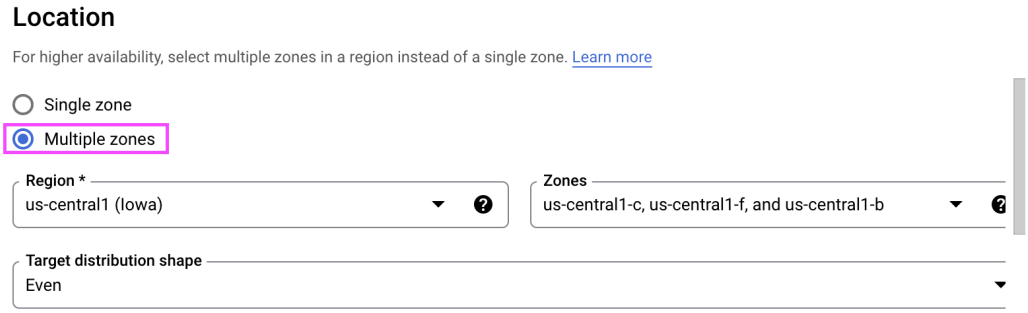
Instance groups let you organize VM instances or use them in a load-balancing backend service. You can group existing instances or create a group based on an instance template. Learn more

CREATE INSTANCE GROUP

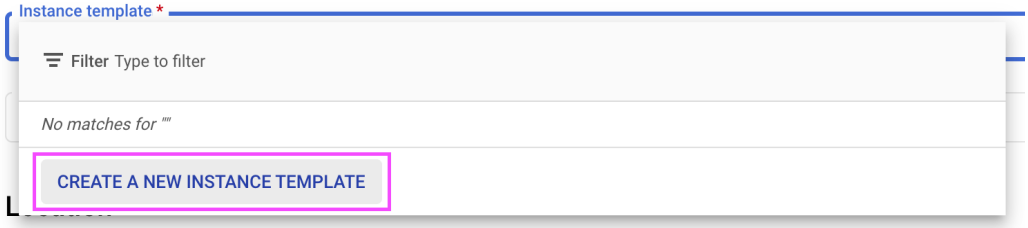
e. Give instance group a “name”; ex: apache



f. Under “Location” give instance group high availability by selecting “Multiple zones”

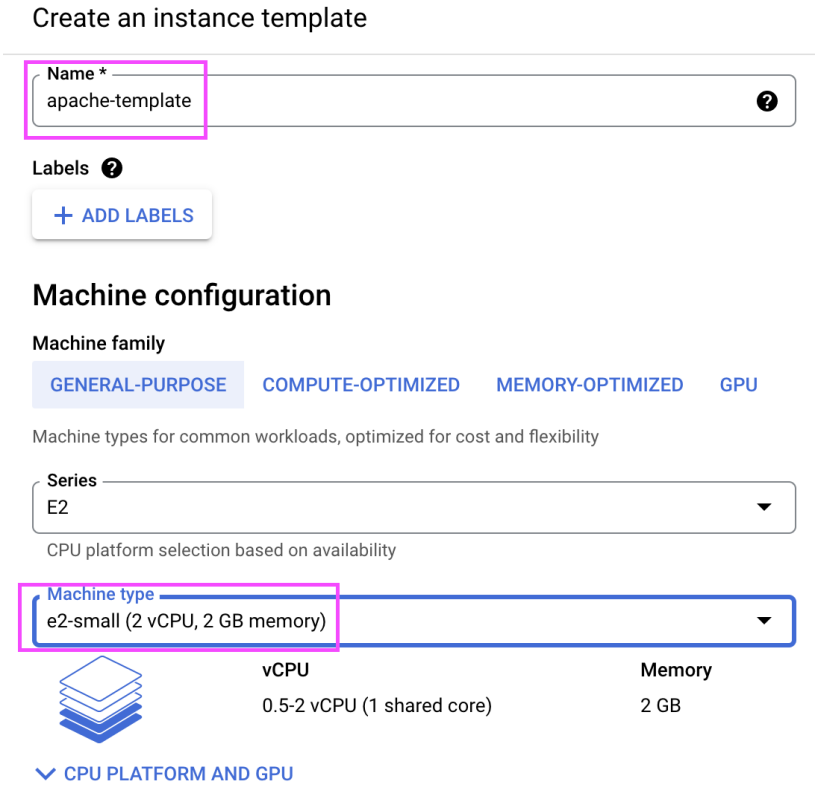


g. Scroll down and under the “instance template” dropdown select “Create new instance template”

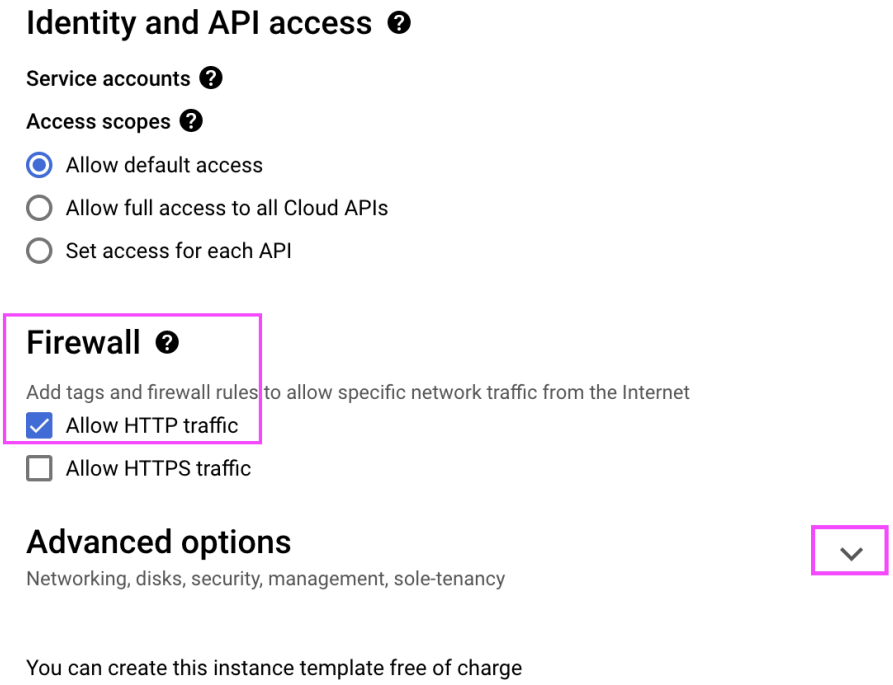


i. “Name” the template

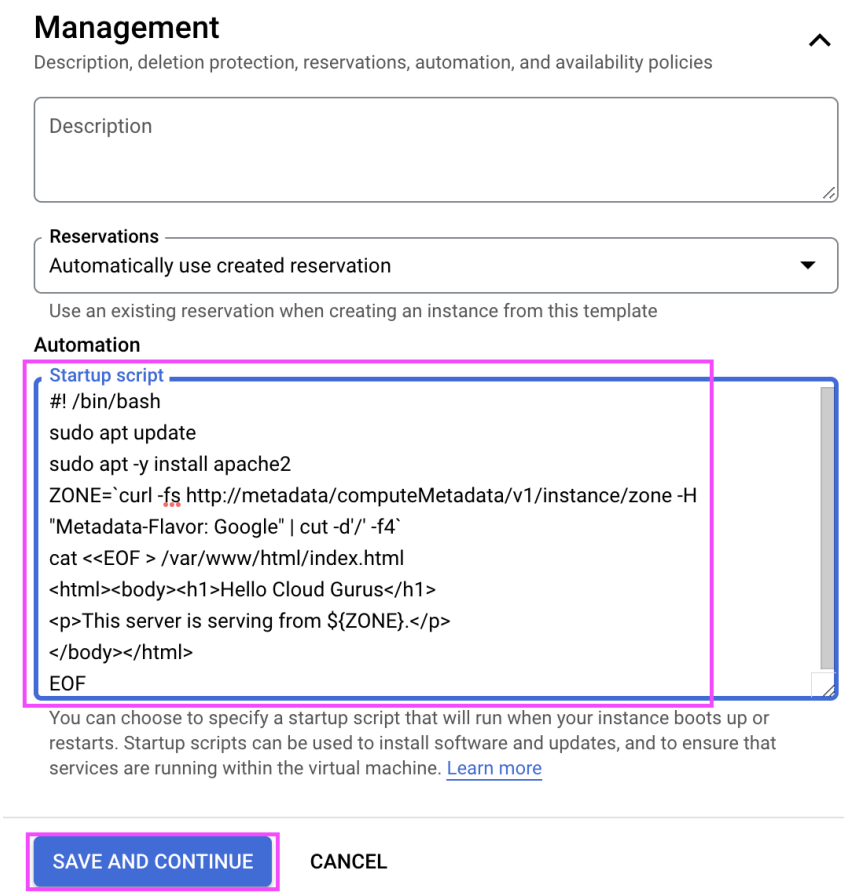
ii. Change “machine type” to “e2-small”



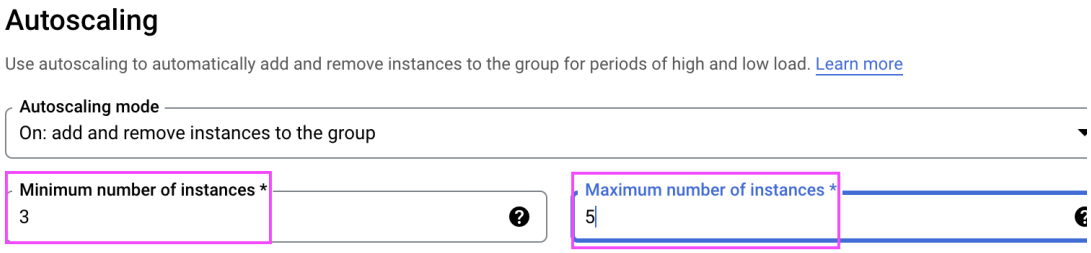
iii. Under “Firewall” select “allow HTTP traffic”, which will assign the HTTP server network tag to instances created from this template



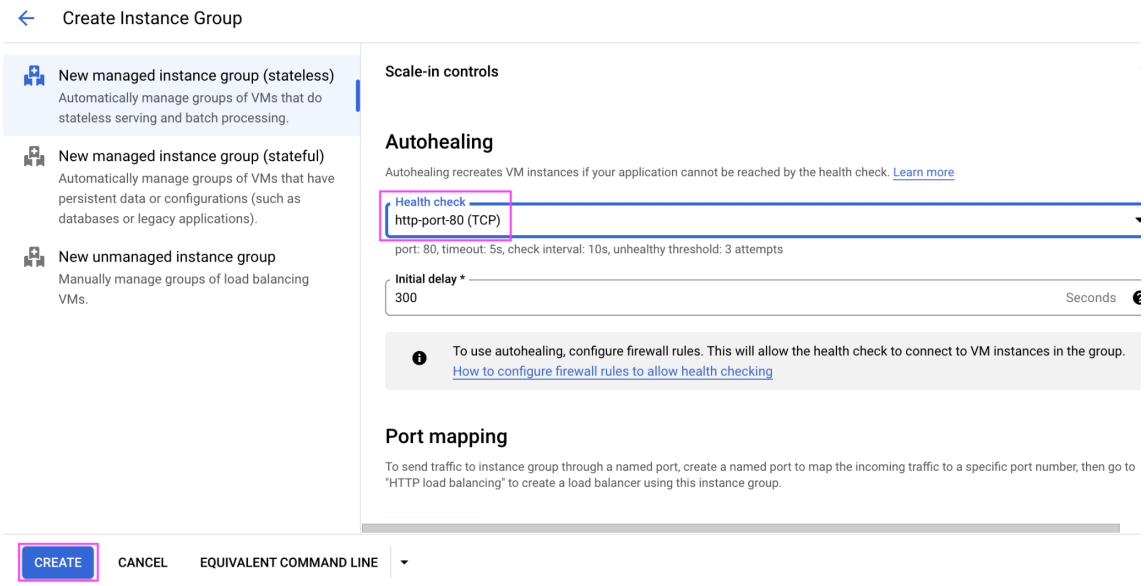
iv. Expand the “Advanced options” menu to open the “Management” section
    1. Under “Automation”, enter in a startup script, which updates the system packages, installs the apache web server, queries the metadata server to get the zone the VM is currently running in, assigns it to the environment variable zone, and creates a basic webpage using the variable to tell us where the server is serving from
v. Click “Save and Continue” to create the instance template

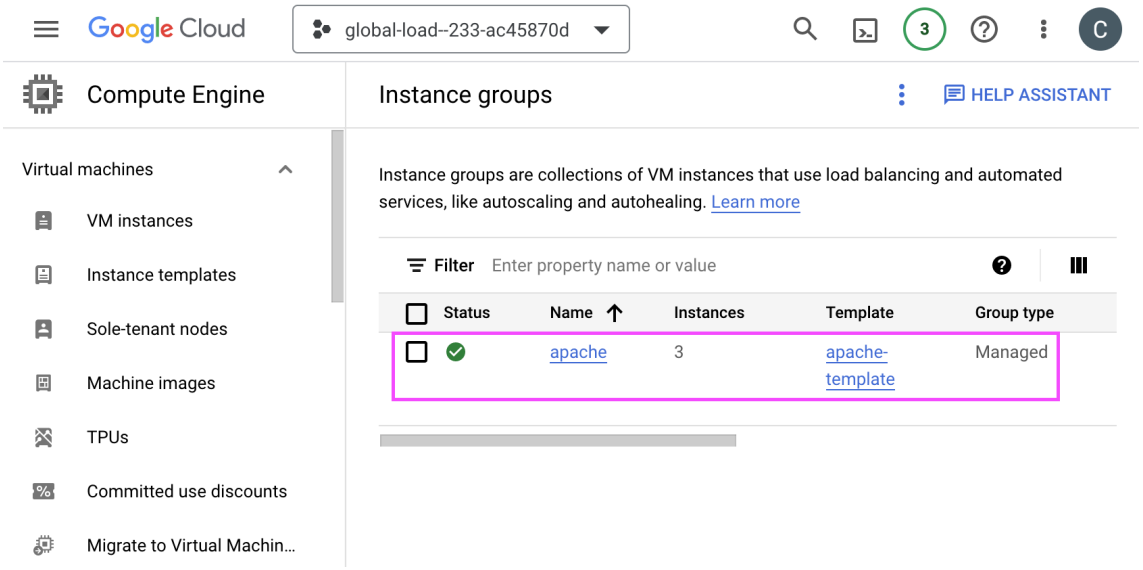


h. Under “Autoscaling” set the “Minimum number of instances” to “3”, and “Maximum number of instances” to “5”

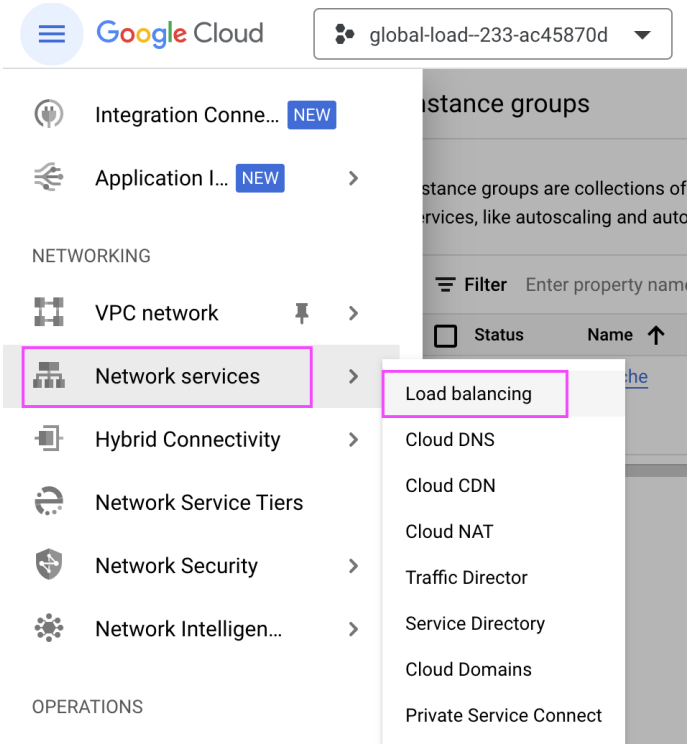


i. Under “Autohealing” select the “http-port-80”
j. Click “Create” to create the managed instance group

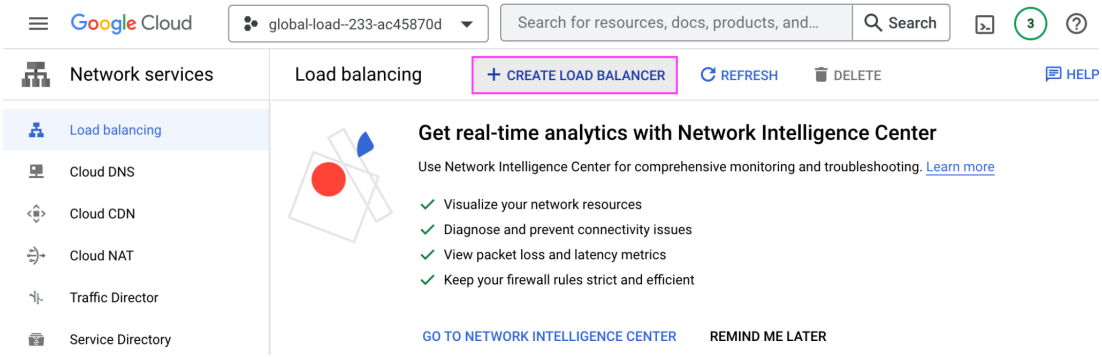




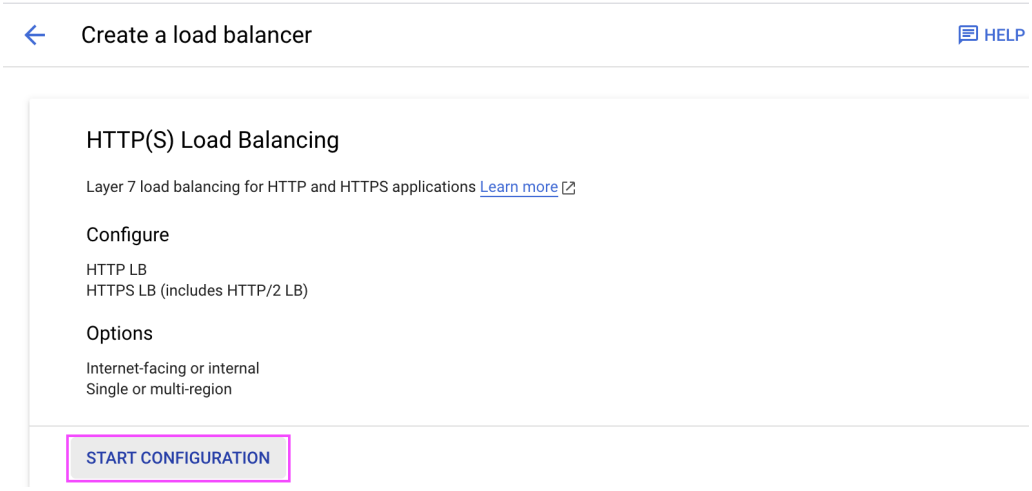
4. Create a load balancer
    a. Select “Network Services” from the left corner menu
    b. Select “Load Balancing”



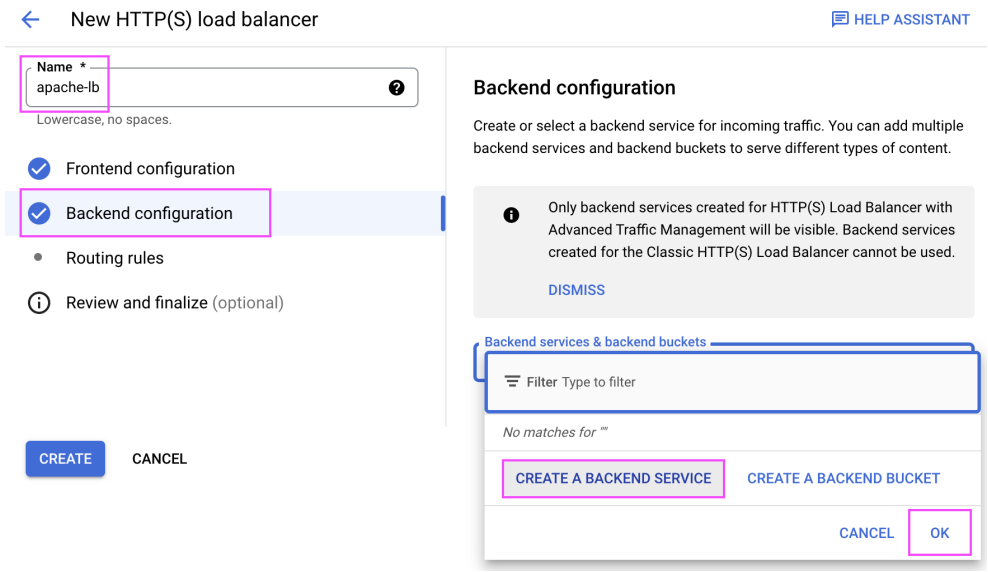
c. “Create load balancer”



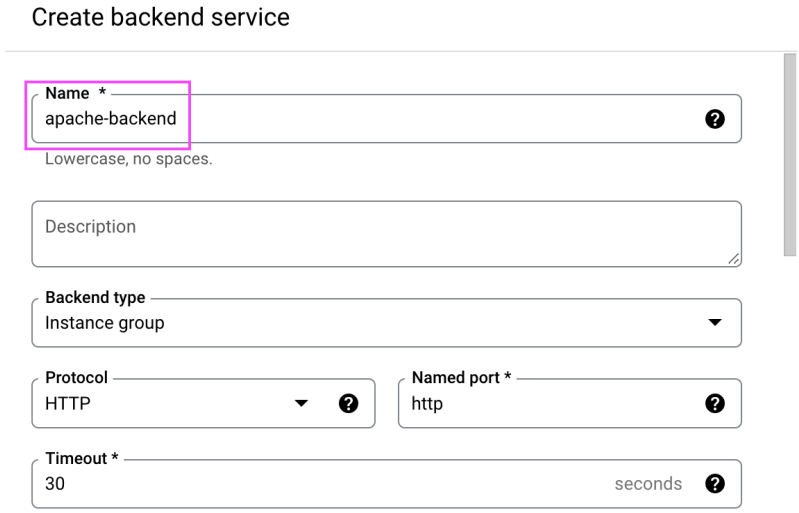
d. In “HTTP(S) Load Balancing” box click “Start Configuration”



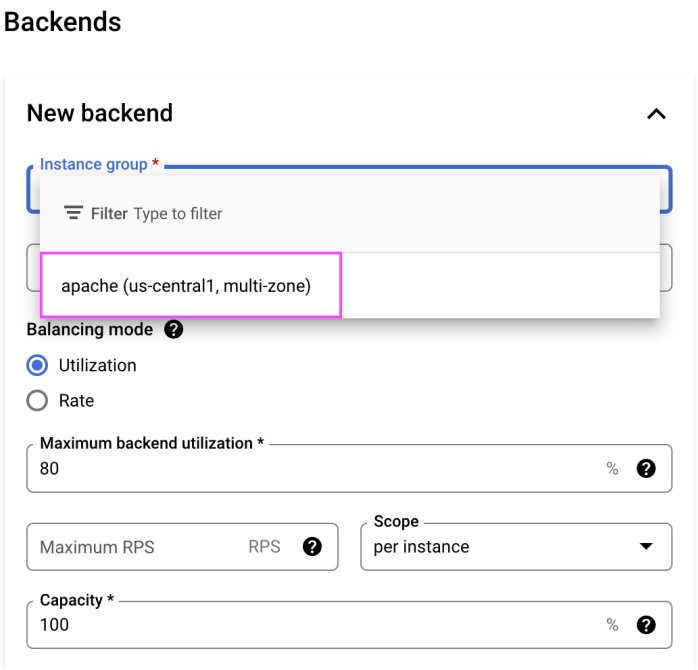
e. “Name” the load balancer; ex: apache-lb
f. Create a “Backend configuration”
    i. From “Backend services & backend buckets” dropdown menu, select “Create a backend service”; “ok”



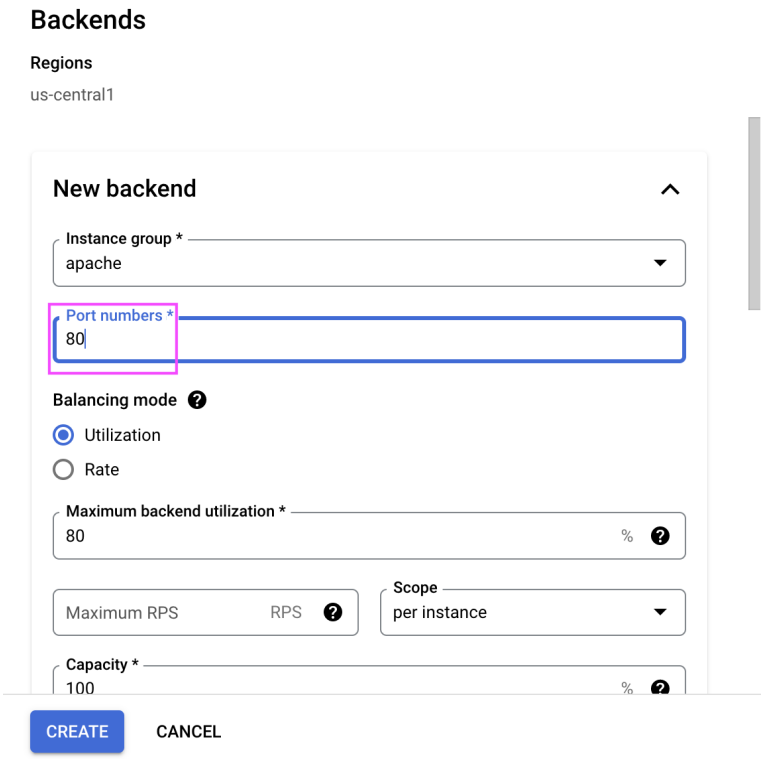
    ii. Assign backend service a “name”; ex: apache-backend



    iii. Under “new backend” section select the “apache” instance group



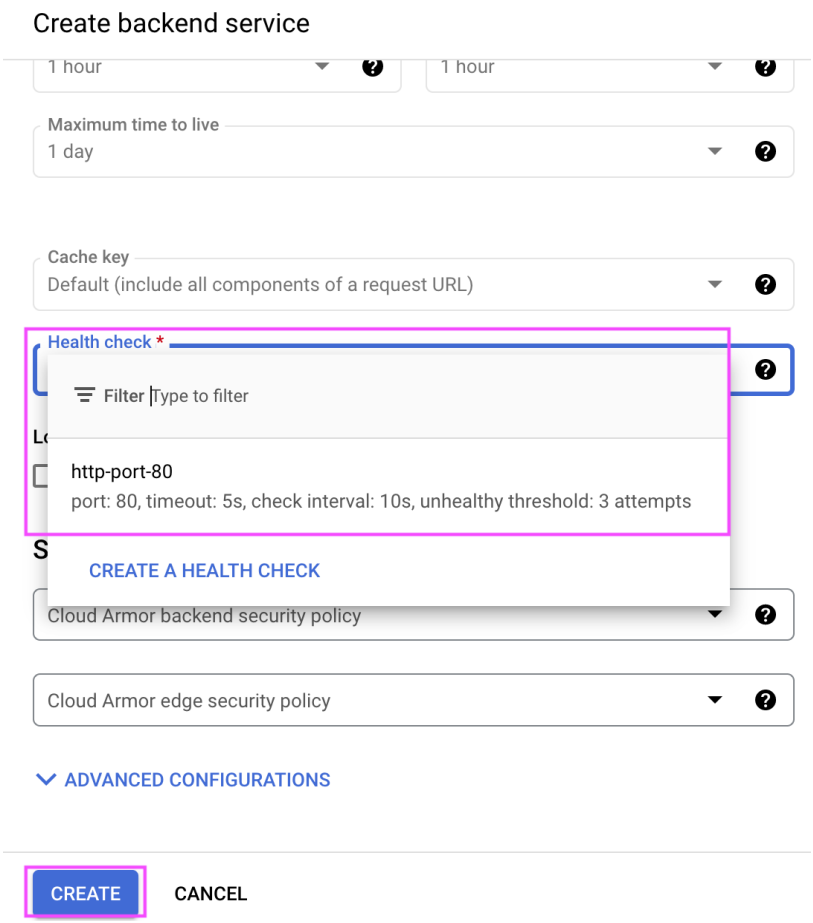
iv. Under “port numbers” select “80”



v. “Done”

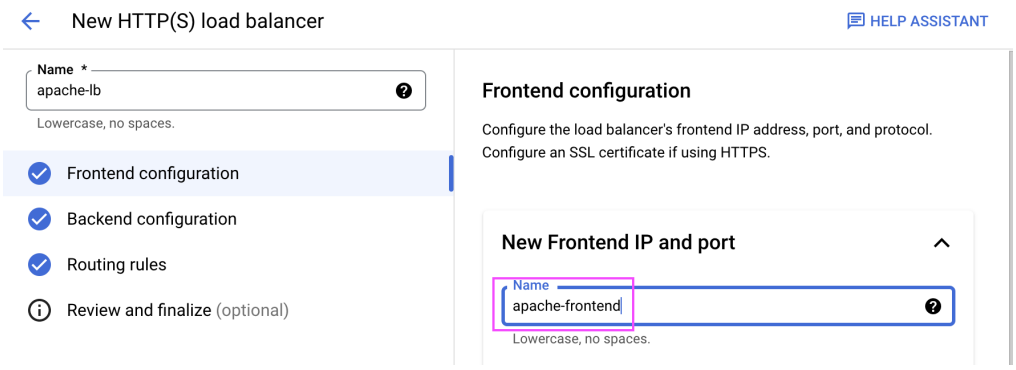
vi. For “Health check” section, select the health check that was created earlier

vii. “Create”



g. Create a “Frontend Configuration”

i. Assign frontend service a “name”; ex: apache-frontend

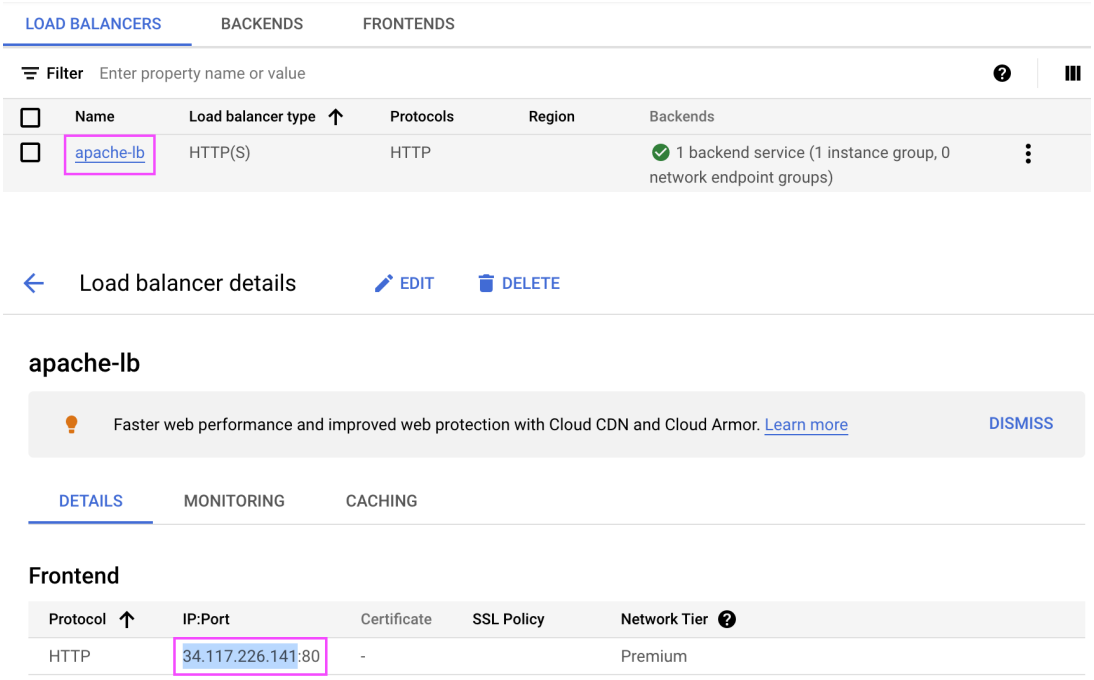


ii. “Done”

h. “Create”

5. Test the load balancer

a. Once load balancer is finished creating, click on it’s name, copy the IP address on the frontend, and load it in your browser


LOAD BALANCERS
BACKENDS
FRONTENDS
Filter
Enter property name or value
Name
Load balancer type
Protocols
Region
Backends
apache-lb
HTTP(S)
HTTP
1 backend service (1 instance group, 0 network endpoint groups)
Load balancer details
EDIT
DELETE
apache-lb
Faster web performance and improved web protection with Cloud CDN and Cloud Armor. Learn more
DISMISS
DETAILS
MONITORING
CACHING
Frontend
Protocol
IP:Port
Certificate
SSL Policy
Network Tier
HTTP
34.117.226.141:80
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Premium