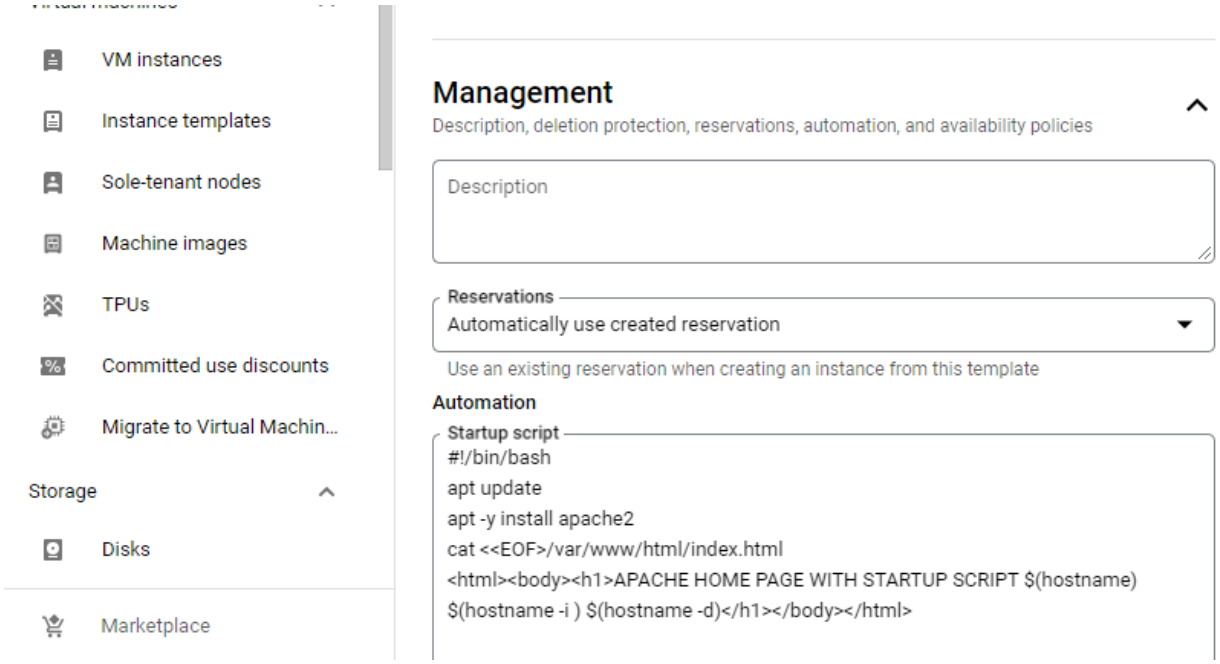
Deploy app to multiple machines -
Instance template - blueprint for all vm . put all config for vm in 1 template and use it for creating vm later .
Create instance from template
Instance group - managed / unmanaged .
Lb - we will attach lb to the instance group .
COmpute engine > instance template > N1 machine - 1 cpu 1.7gb ram > boot disk - 10 gb > allow http access > MAnagement > startup script >

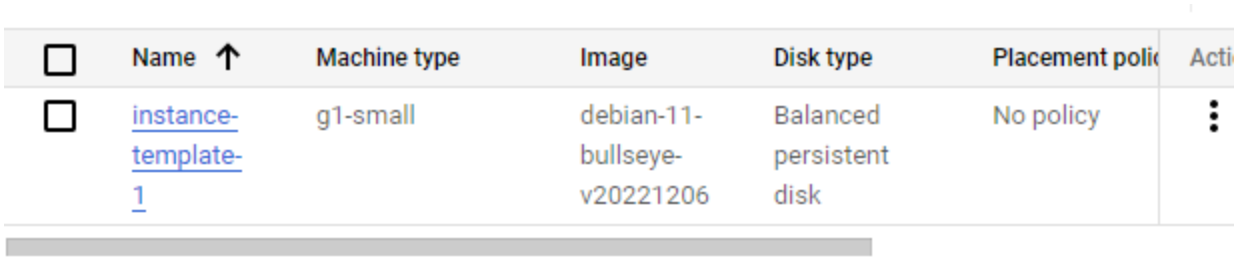
#!/bin/bash
apt update
apt -y install apache2
cat <<EOF>/var/www/html/index.html
<html><body><h1>APACHE HOME PAGE WITH STARTUP SCRIPT $(hostname) $(hostname -i) $(hostname -d)</h1></body></html>



Or

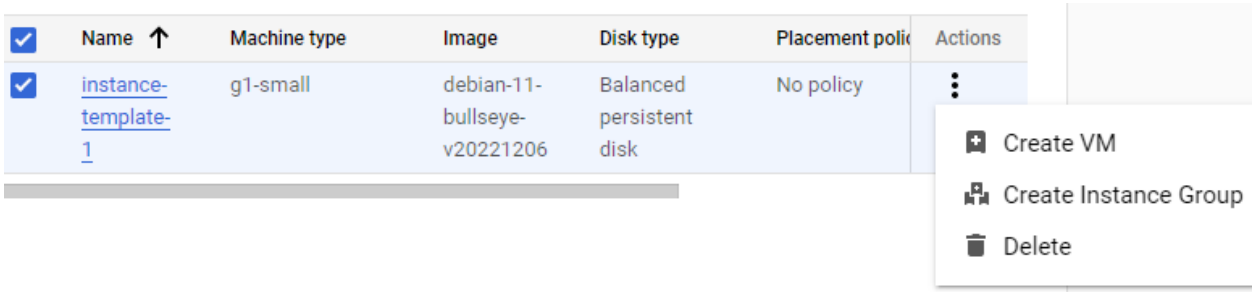
#!/bin/bash
apt update
apt -y install apache2
echo “<h3>APACHE HOME PAGE WITH STARTUP SCRIPT $(hostname) $(hostname -i) $(hostname -d)</h3>”>/var/www/html/index.html

Create a template .



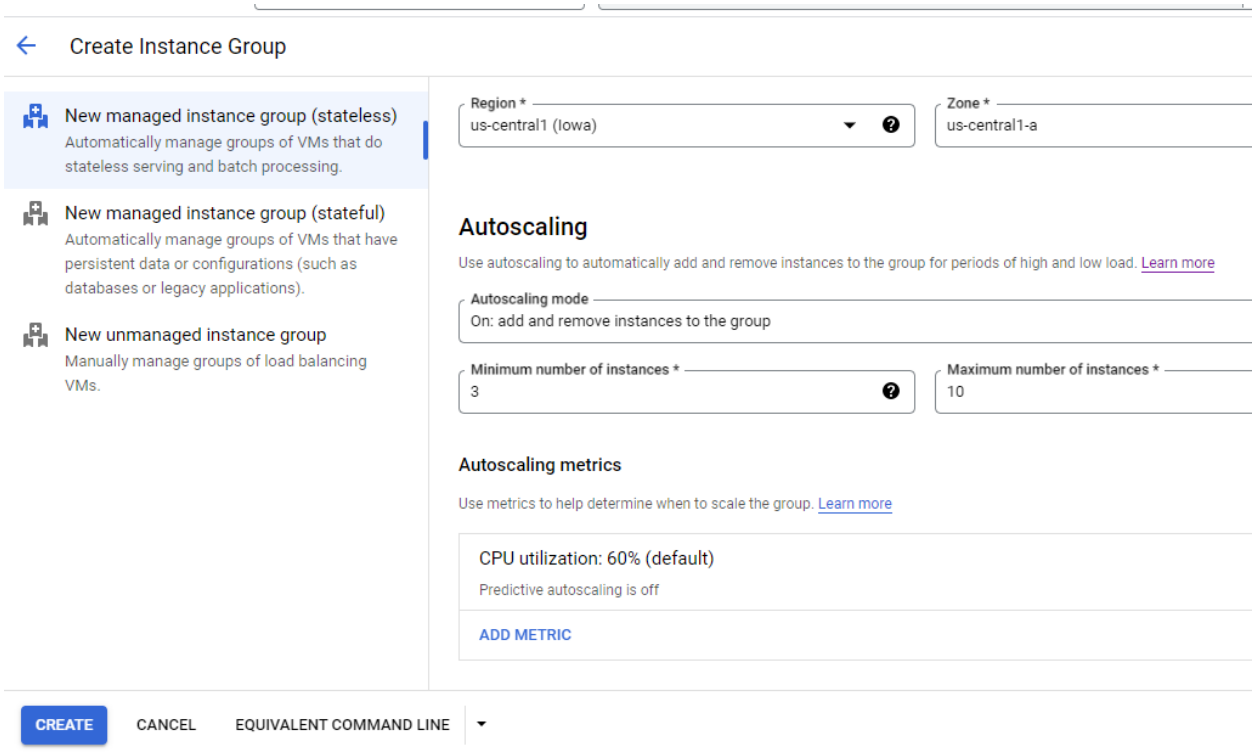
Instance templates are global resources . We don't mention region zones in it but we mention the same for vm .

INstance template > options > create vm > it will take all values by default > Default region zone > all details will be extracted from template . > create .
Once done we can access .

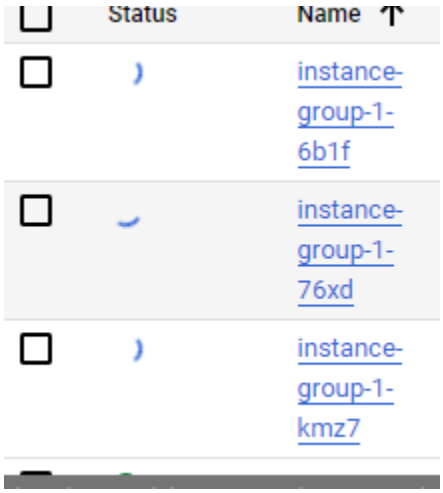


We can ssh to the machine and check host details .

Create instance group - Managed instance group stateless - identical vms > create instance group > instance template - select > select single zone > us central1 - all node will be created in regions and zone only > Autoscaling > on - add and remove instances to group > min - 3 , max 10 > auto scaling metric > cpu utilization - 60% > Create .



MAnaged instance group - stateless , stateful
3 Instances will be created as part of mig .



We can access it using an external ip . If we try to delete 1 instance of mig . then a new vm will be created by mig automatically .
Creating lb to distribute traffic from mig . Lb is part of networking service > lb > http lb > from internet to my vm > classic > create backend service > backend type > instance grup > protocol > http > timeout - 30 >request path - / > health check -http 80 -request path - / > instance group > port 80 > balancing mode - utilization max - 80 , max rps - 100 if utilization goes beyond this then it will redirect traffic to other vm > create .

Create a load balancer

Please answer a few questions to help us select the right load balancing type for your application

Internet facing or internal only

Do you want to load balance traffic from the Internet to your VMs or serverless services, or only between VMs in your network or serverless services?

- (•) From Internet to my VMs or serverless services
- ( ) Only between my VMs or serverless services

Global or Regional

Do you want to deploy your application in global, regional, or classic mode?

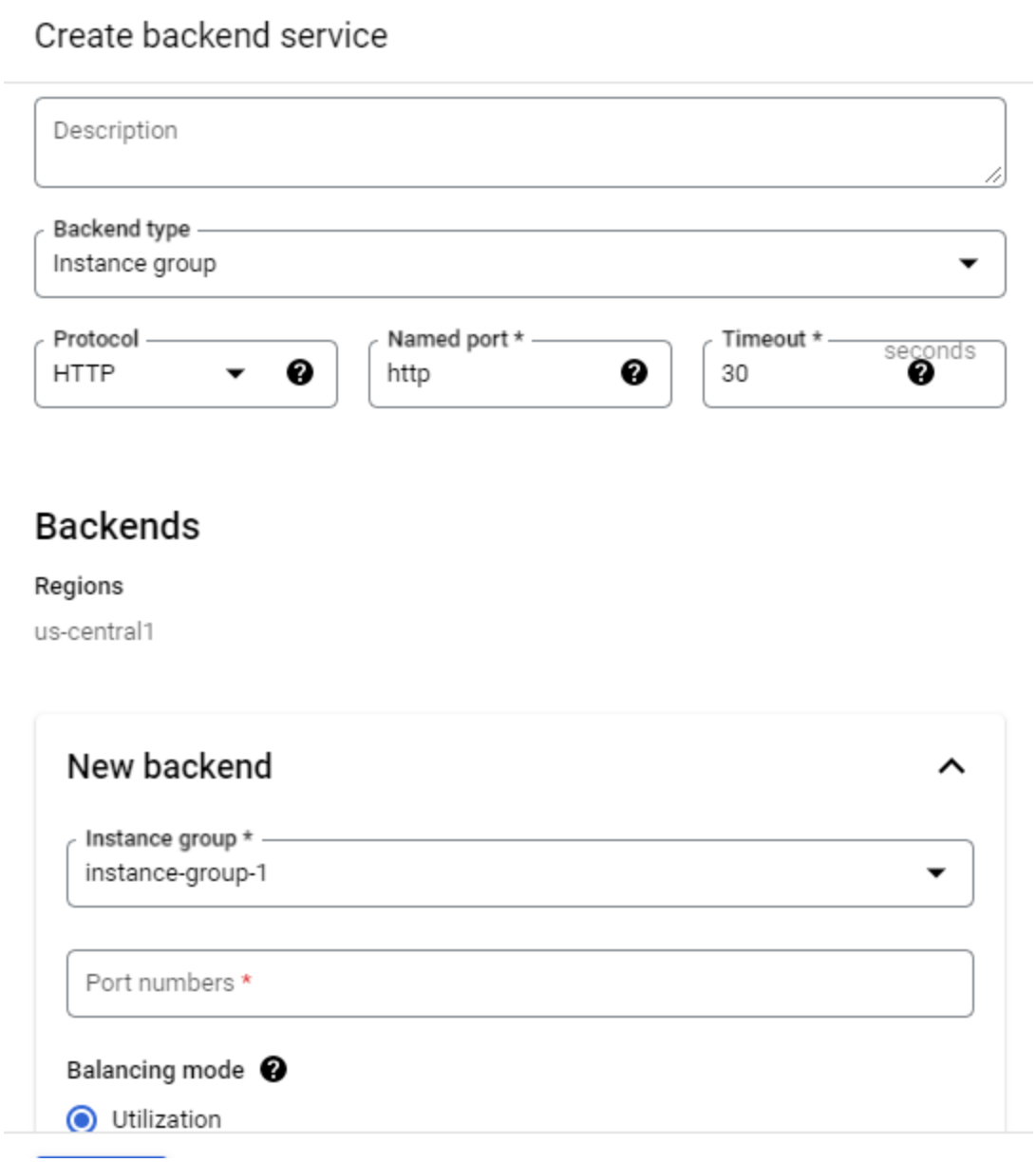
- ( ) Global HTTP(S) Load Balancer
- (•) Global HTTP(S) Load Balancer (classic)
- ( ) Regional HTTP(S) Load Balancer (recommended for Standard Network Tier)

CONTINUE

Name *

Lowercase, no spaces.

- Frontend configuration
- Backend configuration
- Host and path rules
- Review and finalize (optional)



3 config required : backend , host and path rules > frontend config .
Browse lb ip with port and we can see traffic from all vms when we reload .
We can delete lb ,
Site is not reachable with lb since firewall rule is not created for traffic .
Create firewall rule with lb ip and source as all on port 80 . Once done .