Práctica. VPC y Reglas de Firewall

Ejercicio 1

Rango IPv4 principal: 10.154.0.0 /20

Bits: 11111111 11111111 11110000 00000000 => 12 ceros => 2^{12} = 4096 => 4096 – 5 = 4091 direcciones IP disponibles

Rango de IPs: 10.154.0.0 – 10.154.15.255

Ejercicio 2

Verificando que *default-allow-ssh* esté activa

Ssh al shell de Google Cloud a la instancia 1

Verificando que *default-allow-icmp* esté activa

Ping de terminal local a ambas instancias

```
mikles64@mikles64:~$ ping 34.94.114.10
PING 34.94.114.10 (34.94.114.10) 56(84) bytes of data.
64 bytes from 34.94.114.10: icmp_seq=1 ttl=55 time=86.5 ms
64 bytes from 34.94.114.10: icmp_seq=2 ttl=55 time=65.3 ms
64 bytes from 34.94.114.10: icmp_seq=3 ttl=55 time=79.3 ms
64 bytes from 34.94.114.10: icmp_seq=4 ttl=55 time=70.5 ms
64 bytes from 34.94.114.10: icmp_seq=5 ttl=55 time=87.2 ms
^C
--- 34.94.114.10 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4006ms
rtt min/avg/max/mdev = 65.260/77.749/87.246/8.705 ms
mikles64@mikles64:~$ ping 34.94.36.169
PING 34.94.36.169 (34.94.36.169) 56(84) bytes of data.
64 bytes from 34.94.36.169: icmp_seq=1 ttl=57 time=67.5 ms
64 bytes from 34.94.36.169: icmp_seq=2 ttl=57 time=70.7 ms
64 bytes from 34.94.36.169: icmp_seq=3 ttl=57 time=66.7 ms
64 bytes from 34.94.36.169: icmp_seq=4 ttl=57 time=66.1 ms
64 bytes from 34.94.36.169: icmp_seq=5 ttl=57 time=71.9 ms
^C
--- 34.94.36.169 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4006ms
rtt min/avg/max/mdev = 66.121/68.585/71.921/2.311 ms
mikles64@mikles64:~$
```

Verificar que *default-allow-internal* esté activa

Ping de instancia 1 a instancia 2

```
miguelrodriguez151522@instance-1:~$ ping -c 5 10.168.0.3
PING 10.168.0.3 (10.168.0.3) 56(84) bytes of data.
64 bytes from 10.168.0.3: icmp_seq=1 ttl=64 time=1.73 ms
64 bytes from 10.168.0.3: icmp_seq=2 ttl=64 time=0.929 ms
64 bytes from 10.168.0.3: icmp_seq=3 ttl=64 time=0.872 ms
64 bytes from 10.168.0.3: icmp_seq=4 ttl=64 time=0.882 ms
64 bytes from 10.168.0.3: icmp_seq=5 ttl=64 time=0.886 ms

--- 10.168.0.3 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 0.872/1.060/1.734/0.337 ms
```

Ping de instancia 2 a instancia 1

```
miguelrodriguez151522@instance-2:~$ ping -c 5 10.168.0.2
PING 10.168.0.2 (10.168.0.2) 56(84) bytes of data.
64 bytes from 10.168.0.2: icmp_seq=1 ttl=64 time=1.48 ms
64 bytes from 10.168.0.2: icmp_seq=2 ttl=64 time=0.846 ms
64 bytes from 10.168.0.2: icmp_seq=3 ttl=64 time=0.870 ms
64 bytes from 10.168.0.2: icmp_seq=4 ttl=64 time=0.884 ms
64 bytes from 10.168.0.2: icmp_seq=5 ttl=64 time=0.849 ms

--- 10.168.0.2 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 0.846/0.985/1.476/0.245 ms
miguelrodriguez151522@instance-2:~$
```

Verificar que *Implied allow egress* esté activa

Curl de instancia 1 a www.google.com

```
miguelrodriguez151522@instance-1:~$ curl -I https://www.google.com
HTTP/2 200
content-type: text/html; charset=ISO-8859-1
content-security-policy-report-only: object-src 'none';base-uri 'self';script-src 'nonce-fQpwqG_UxJ-jEP7AGiEp2A
' 'strict-dynamic' 'report-sample' 'unsafe-eval' 'unsafe-inline' https: http:;report-uri https://csp.withgoogle
.com/csp/gws/other-hp
accept-ch: Sec-CH-Prefers-Color-Scheme
p3p: CP="This is not a P3P policy! See g.co/p3phelp for more info."
date: Tue, 04 Nov 2025 02:10:35 GMT
server: gws
x-xss-protection: 0
x-frame-options: SAMEORIGIN
expires: Tue, 04 Nov 2025 02:10:35 GMT
cache-control: private
set-cookie: AEC=AaJma5vDkgl_XbchZTL1EddonIliK1Ymew9dtZlNn42LwFwFBKg24Zs5Fw; expires=Sun, 03-May-2026 02:10:35 G
MT; path=/; domain=.google.com; Secure; HttpOnly; SameSite=lax
set-cookie: NID=526=qUWHG4Hkv8NnpSWgGUl0WNk42W1g74y2OIrps-ayYoIl4iyVgfxJKmF1Sn2pPtyykVeNCe3eoM_JRbVDp43EXp785eK
Ttby1Z0AwhVUZWaNi6VJNvg-6kM2pzGMX603HVrD8c71oNnellr820uMG_f3rMW5Hx0qyEfpLFADB0l_Od7QHCR1u6vvRTpzwrYAFJeZ-zj5JeF
TqabYUo8-c; expires=Wed, 06-May-2026 02:10:35 GMT; path=/; domain=.google.com; HttpOnly
```

Curl de instancia 2 a www.google.com

```
miguelrodriguez151522@instance-2:~$ curl -I https://www.google.com
HTTP/2 200
content-type: text/html; charset=ISO-8859-1
content-security-policy-report-only: object-src 'none';base-uri 'self';script-src 'nonce-7oEz-bjh13_1yWllNsg4iA
' 'strict-dynamic' 'report-sample' 'unsafe-eval' 'unsafe-inline' https: http:;report-uri https://csp.withgoogle
.com/csp/gws/other-hp
accept-ch: Sec-CH-Prefers-Color-Scheme
p3p: CP="This is not a P3P policy! See g.co/p3phelp for more info."
date: Tue, 04 Nov 2025 02:08:29 GMT
server: gws
x-xss-protection: 0
x-frame-options: SAMEORIGIN
expires: Tue, 04 Nov 2025 02:08:29 GMT
cache-control: private
set-cookie: AEC=AaJma5vDqdvioaJfvFfyAffxA-b_xc_tjAwbwSvI04QgoMObQ8fhS3QTYO0; expires=Sun, 03-May-2026 02:08:29
GMT; path=/; domain=.google.com; Secure; HttpOnly; SameSite=lax
set-cookie: NID=526=TWRU9zljtbz5cjbnIarAU7boIUIqrg_jlXfcyfbOkhM4BGuQd4HHSRzMTEutTuziqXjNkFaOLO20Nl6qhRv76ayRlnF
JJq2qG4amvEVZzJnpEgsffhpN1PEfEV43tQukzeuCRMdvPbdmTV3KGTOg4k4Ynch195ENfaRcuDpotymsw3q2bH4xml4gk_8UVxguJXtz6EWgY2
oYhCcnr64; expires=Wed, 06-May-2026 02:08:29 GMT; path=/; domain=.google.com; HttpOnly
```

Verificar que *Implied deny ingress* esté activo

Comando telnet a ambas instancias

```
mikles64@mikles64:~$ telnet 34.94.114.10 80
Trying 34.94.114.10...
telnet: Unable to connect to remote host: Expiró el tiempo de conexión
mikles64@mikles64:~$ telnet 34.94.36.169 80
Trying 34.94.36.169...
telnet: Unable to connect to remote host: Expiró el tiempo de conexión
```