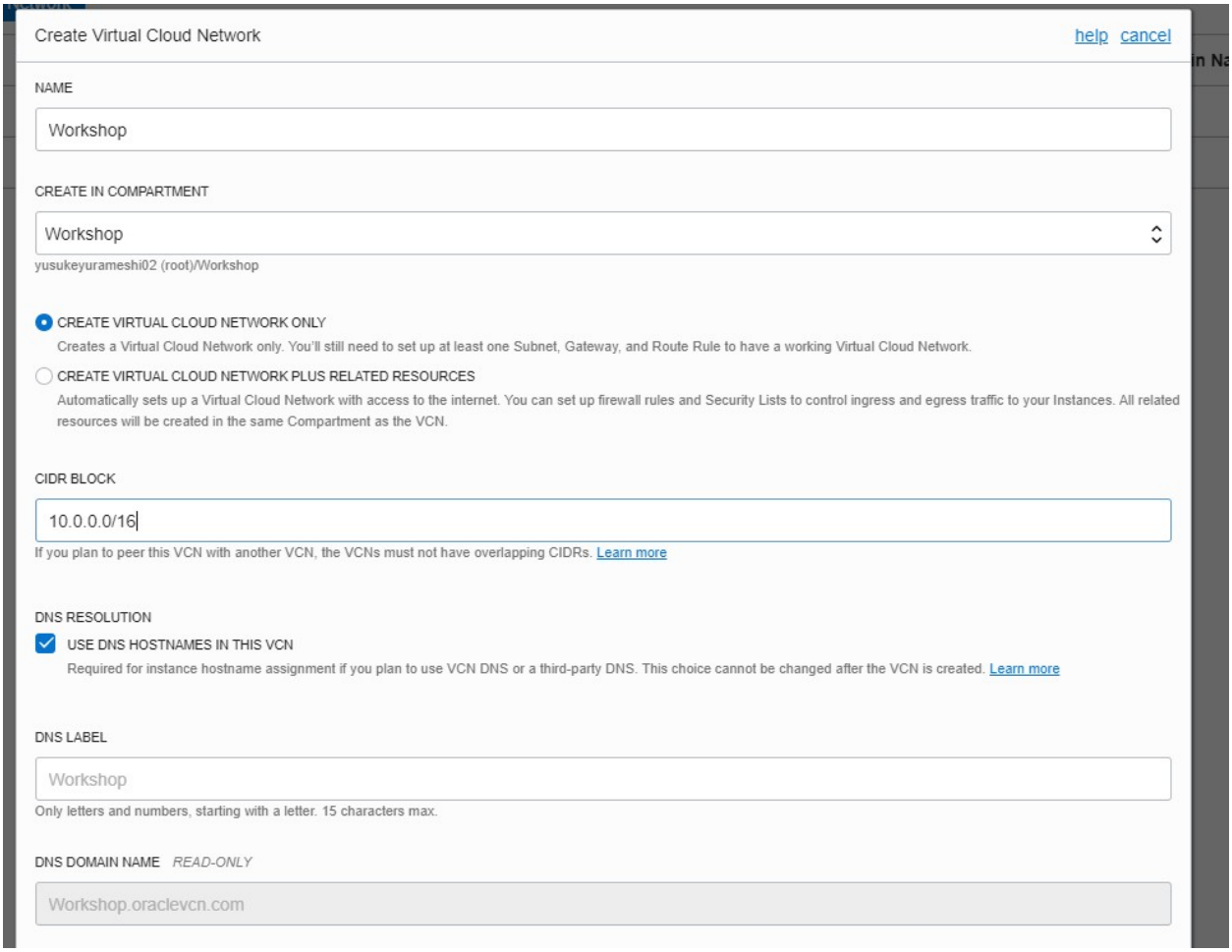
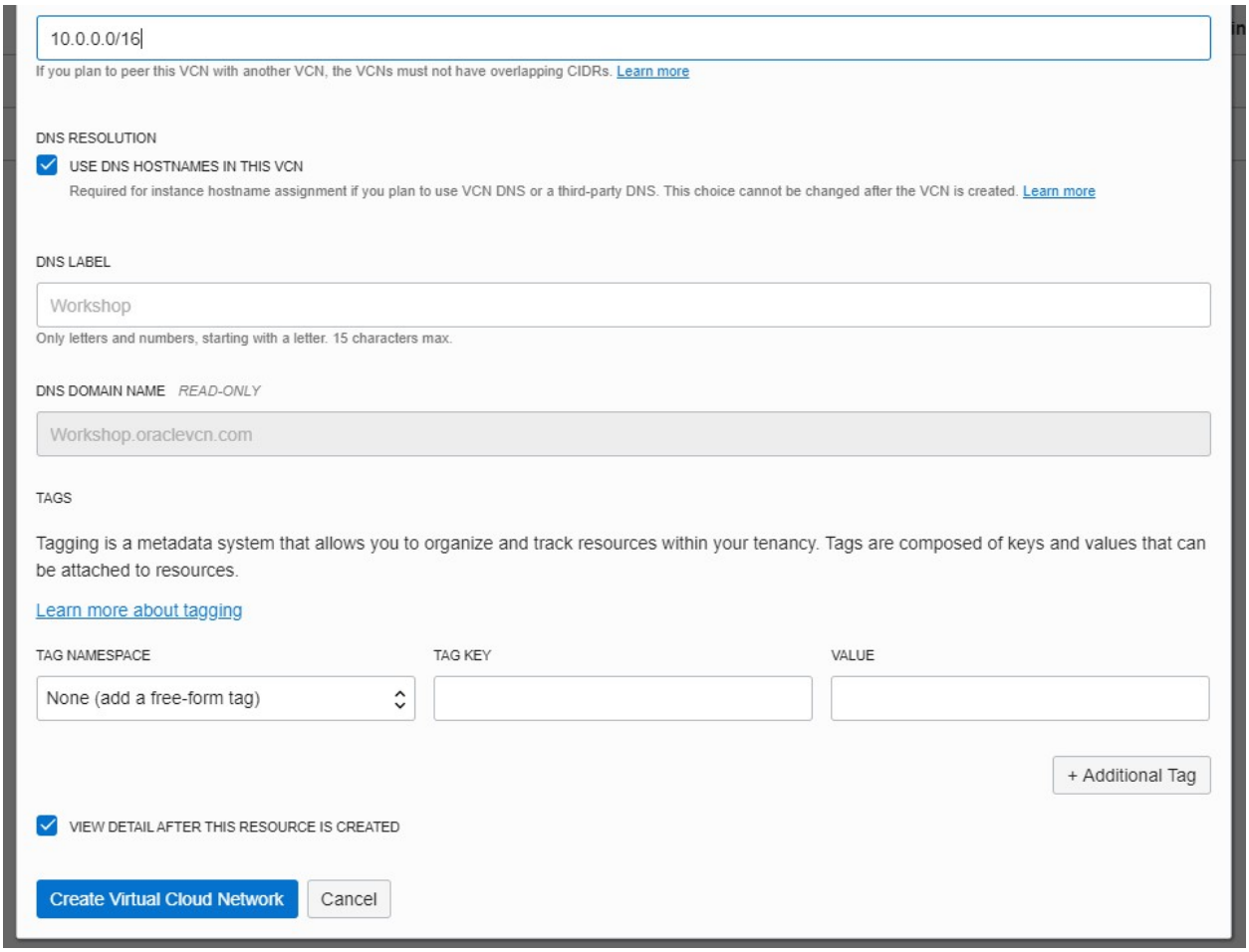
Workshop OCI IaaS

Assustos abordados:

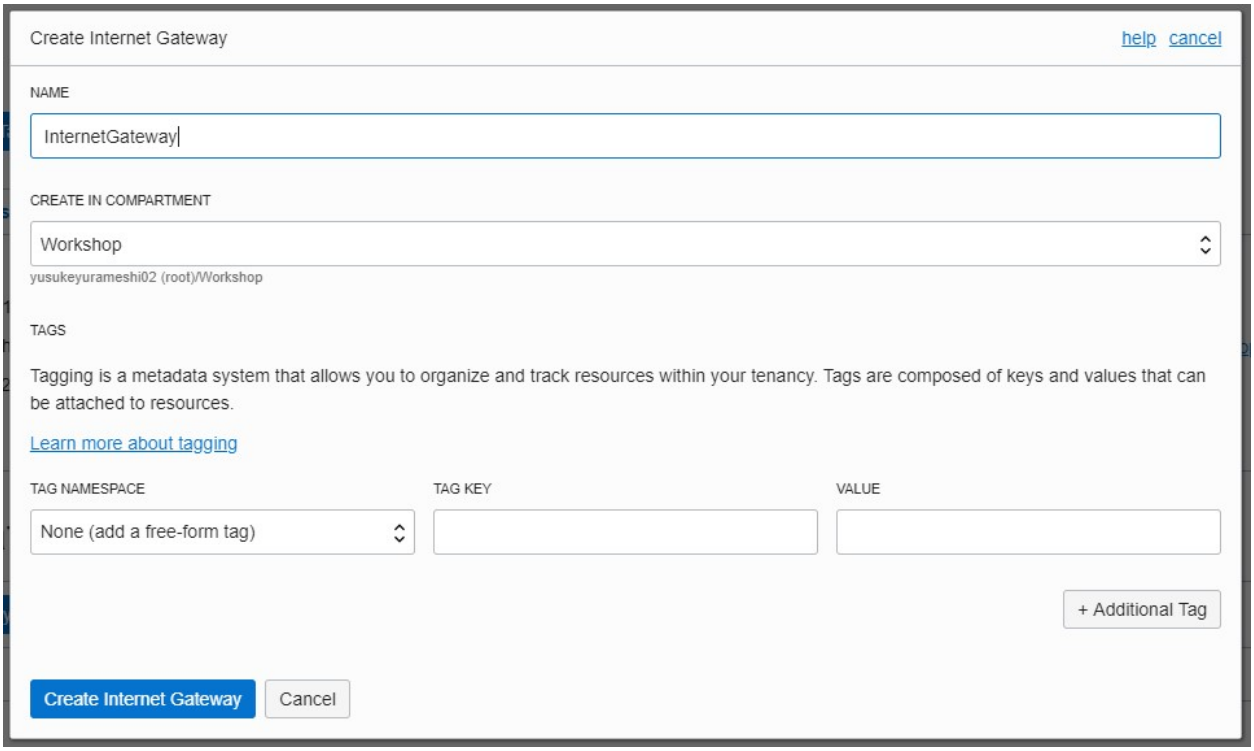
- Compartments
- VCN
    - Subnet pública e privada
    - Internet Gateway
    - Nat Gateway
    - Route Table
    - Security List
- Load Balancer Público
- Instance Compute
    - Cloud Init Script
- Configuration Instance
- Instance Pool
- Autoscaling Configuration

Criar VCN:

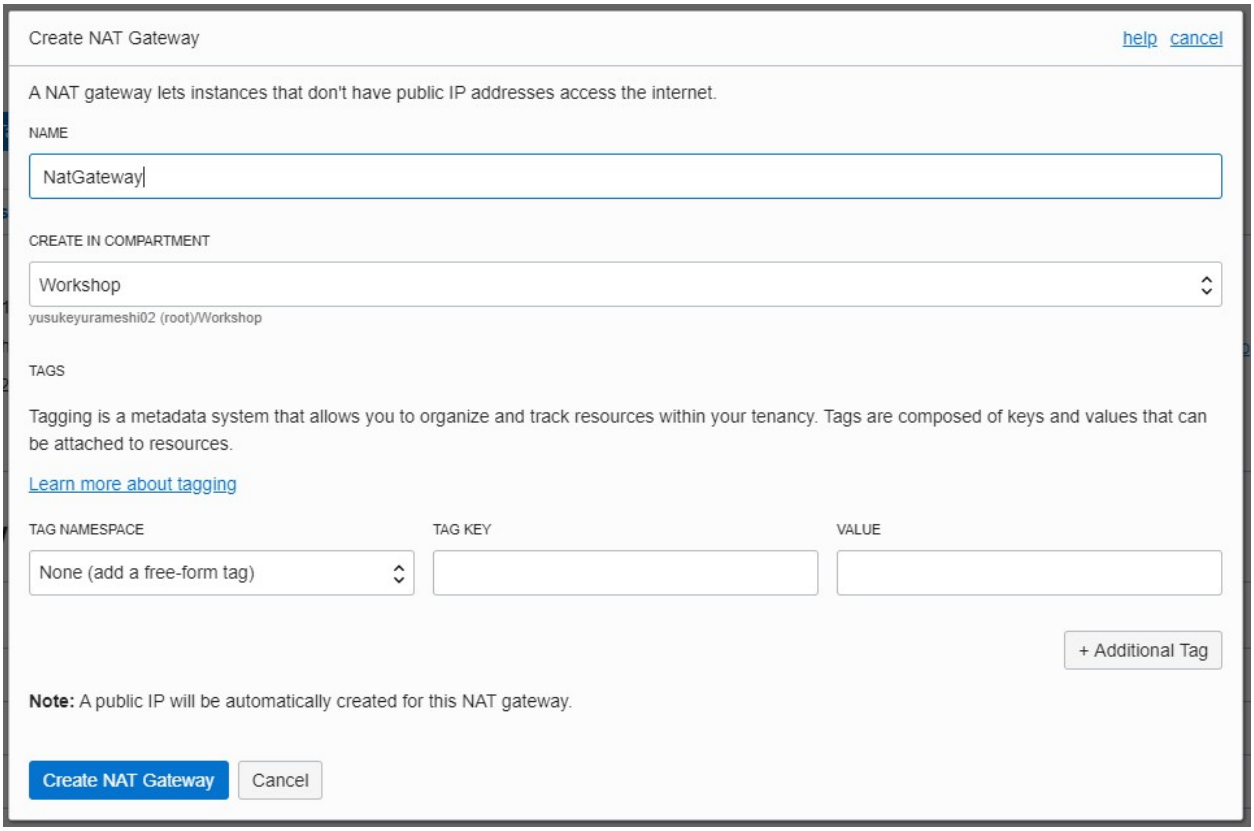

Create Virtual Cloud Network
help
cancel
NAME
Workshop
CREATE IN COMPARTMENT
Workshop
yusukeyurameshi02 (root)/Workshop
CREATE VIRTUAL CLOUD NETWORK ONLY
Creates a Virtual Cloud Network only. You'll still need to set up at least one Subnet, Gateway, and Route Rule to have a working Virtual Cloud Network.
CREATE VIRTUAL CLOUD NETWORK PLUS RELATED RESOURCES
Automatically sets up a Virtual Cloud Network with access to the internet. You can set up firewall rules and Security Lists to control ingress and egress traffic to your Instances. All related resources will be created in the same Compartment as the VCN.
CIDR BLOCK
10.0.0.0/16
If you plan to peer this VCN with another VCN, the VCNs must not have overlapping CIDRs. Learn more
DNS RESOLUTION
USE DNS HOSTNAMES IN THIS VCN
Required for instance hostname assignment if you plan to use VCN DNS or a third-party DNS. This choice cannot be changed after the VCN is created. Learn more
DNS LABEL
Workshop
Only letters and numbers, starting with a letter. 15 characters max.
DNS DOMAIN NAME READ-ONLY
Workshop.oraclevcn.com



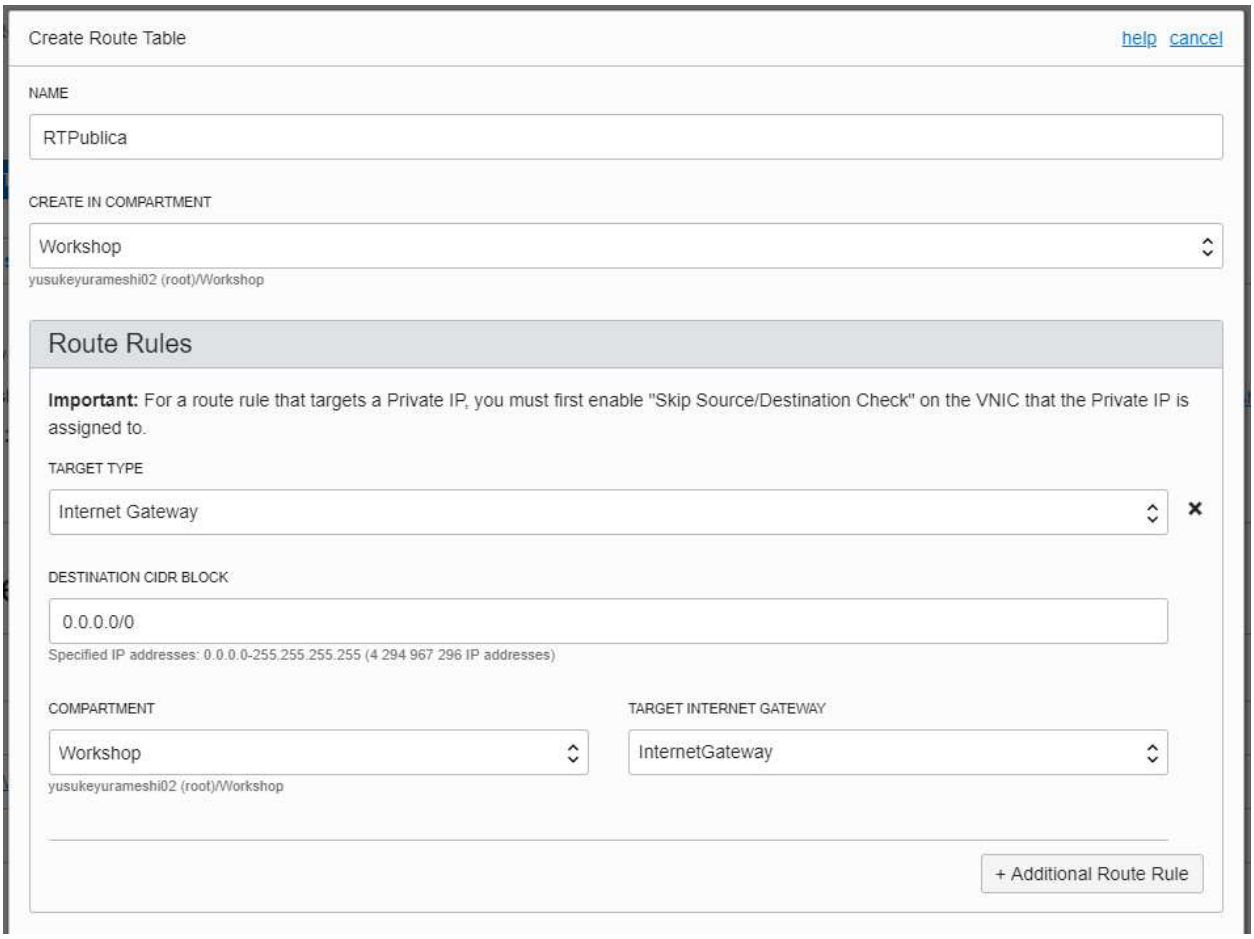
Criar internet gateway:



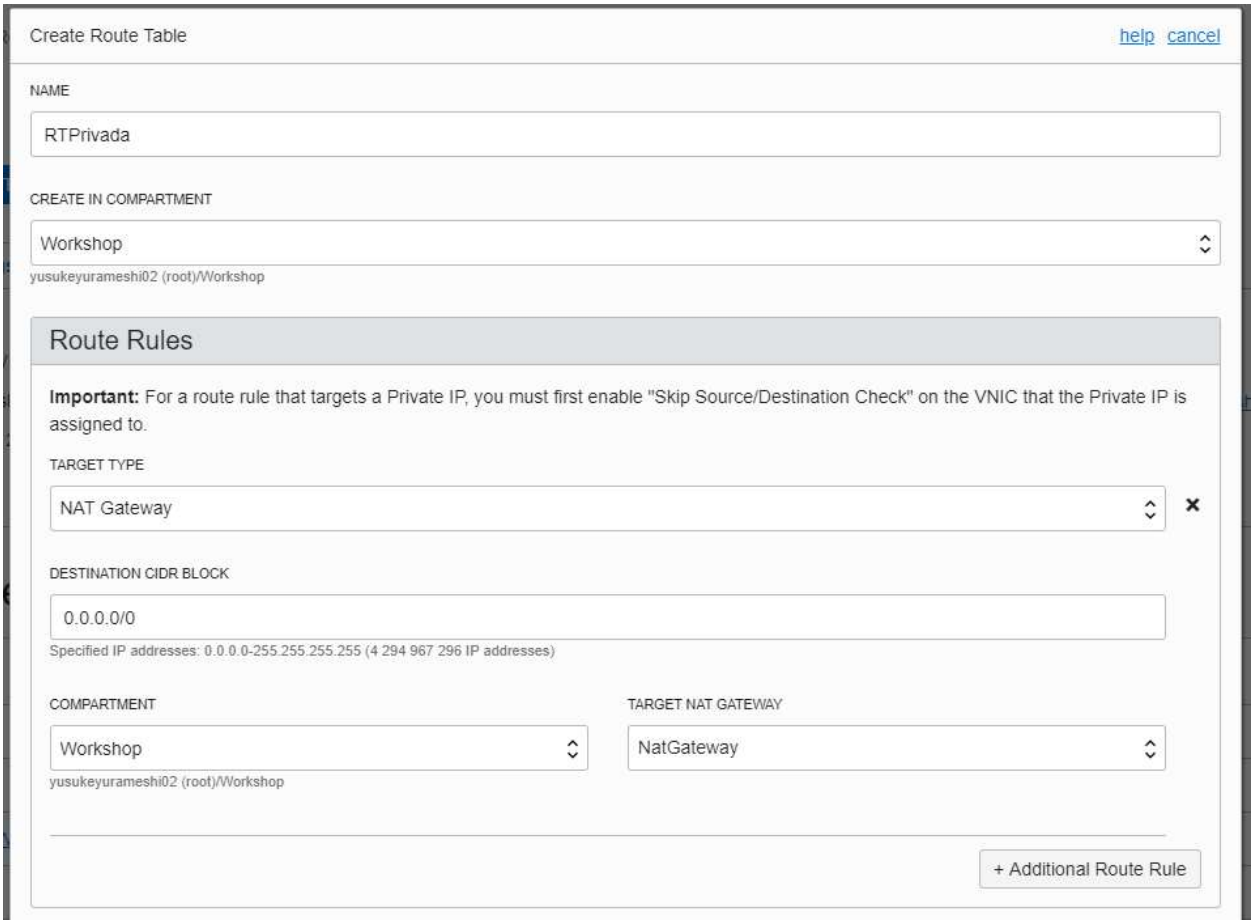
Criar Nat Gateway:



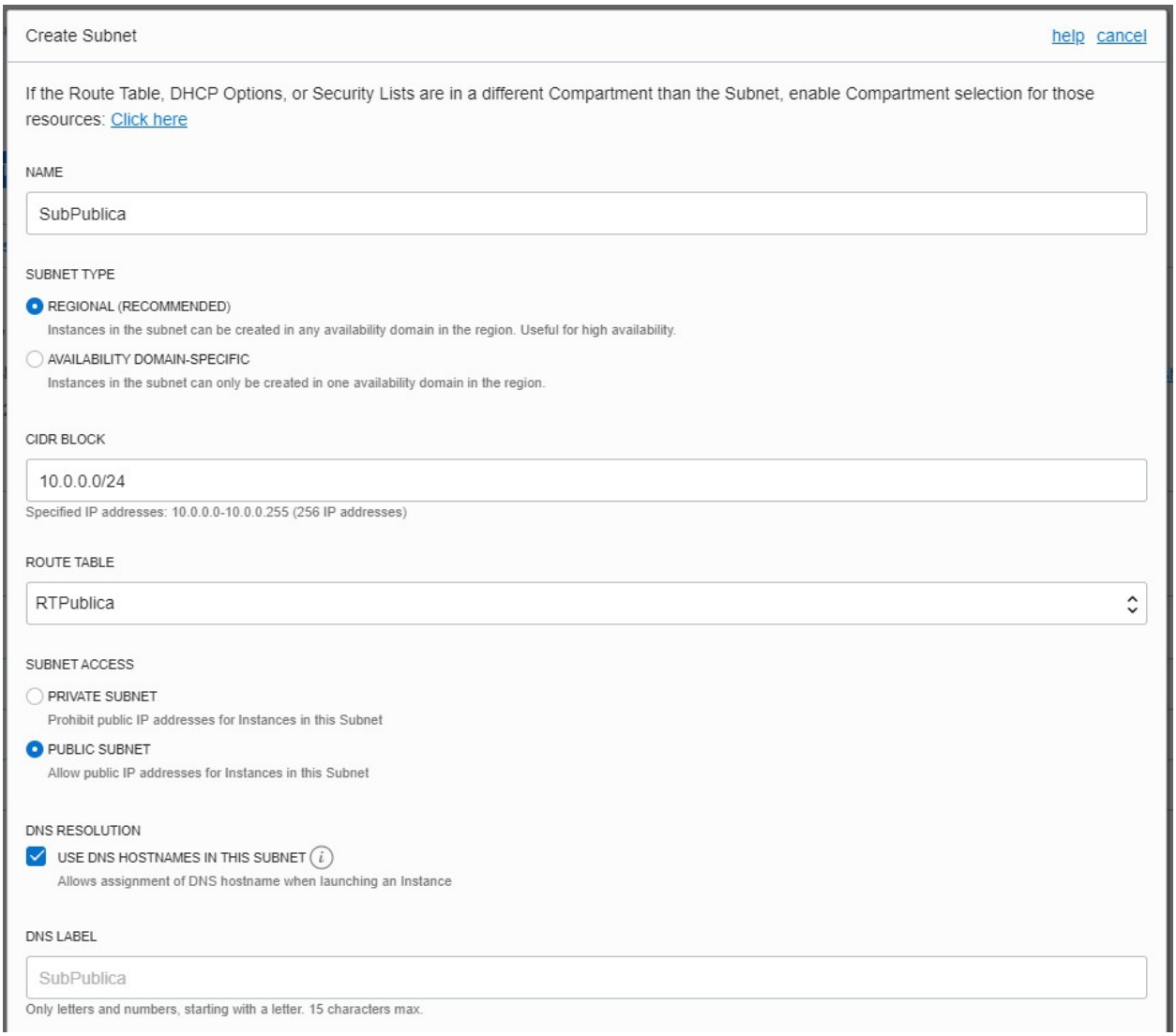
Criar Route Table Pública:

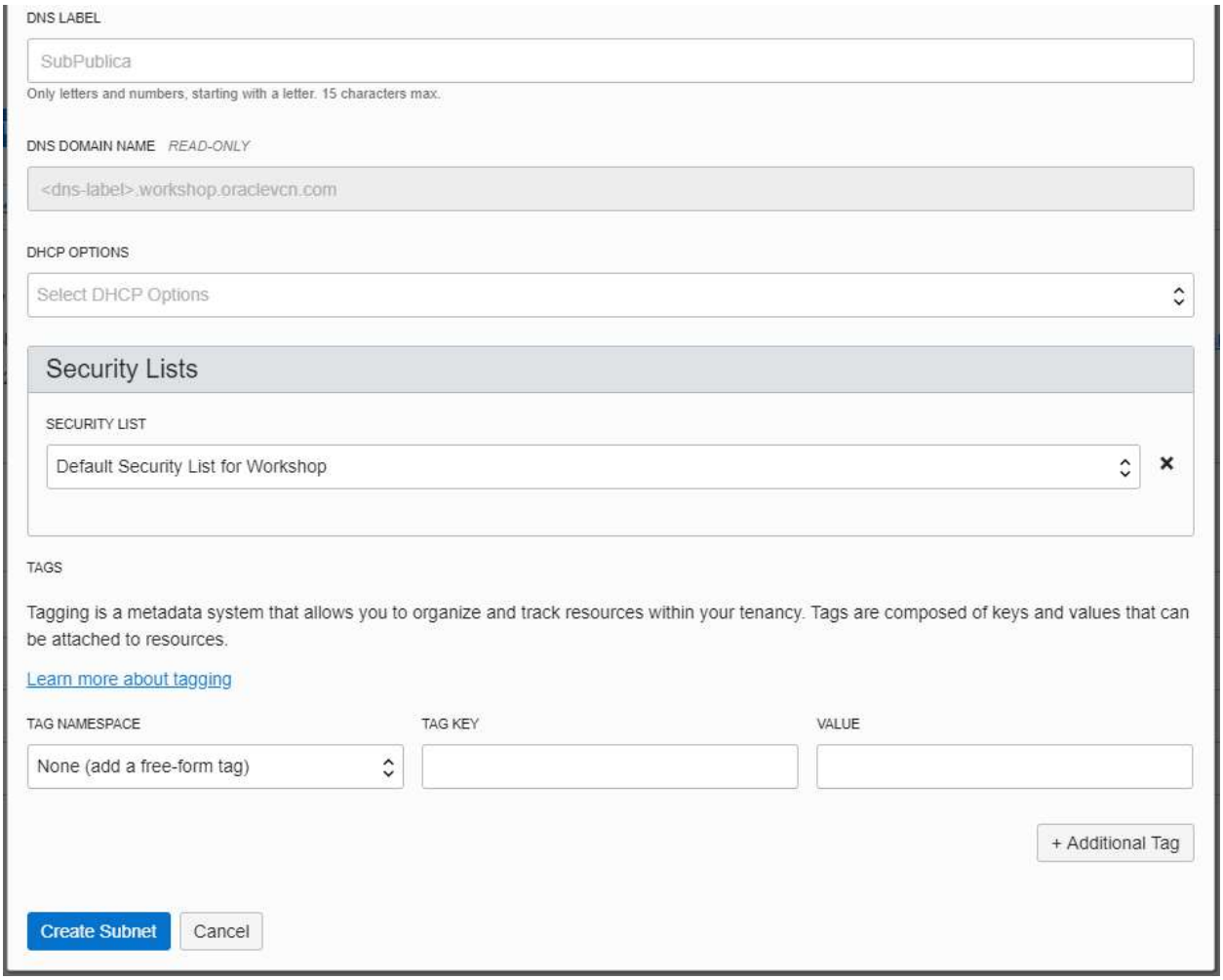


Criar Route Table Privada:

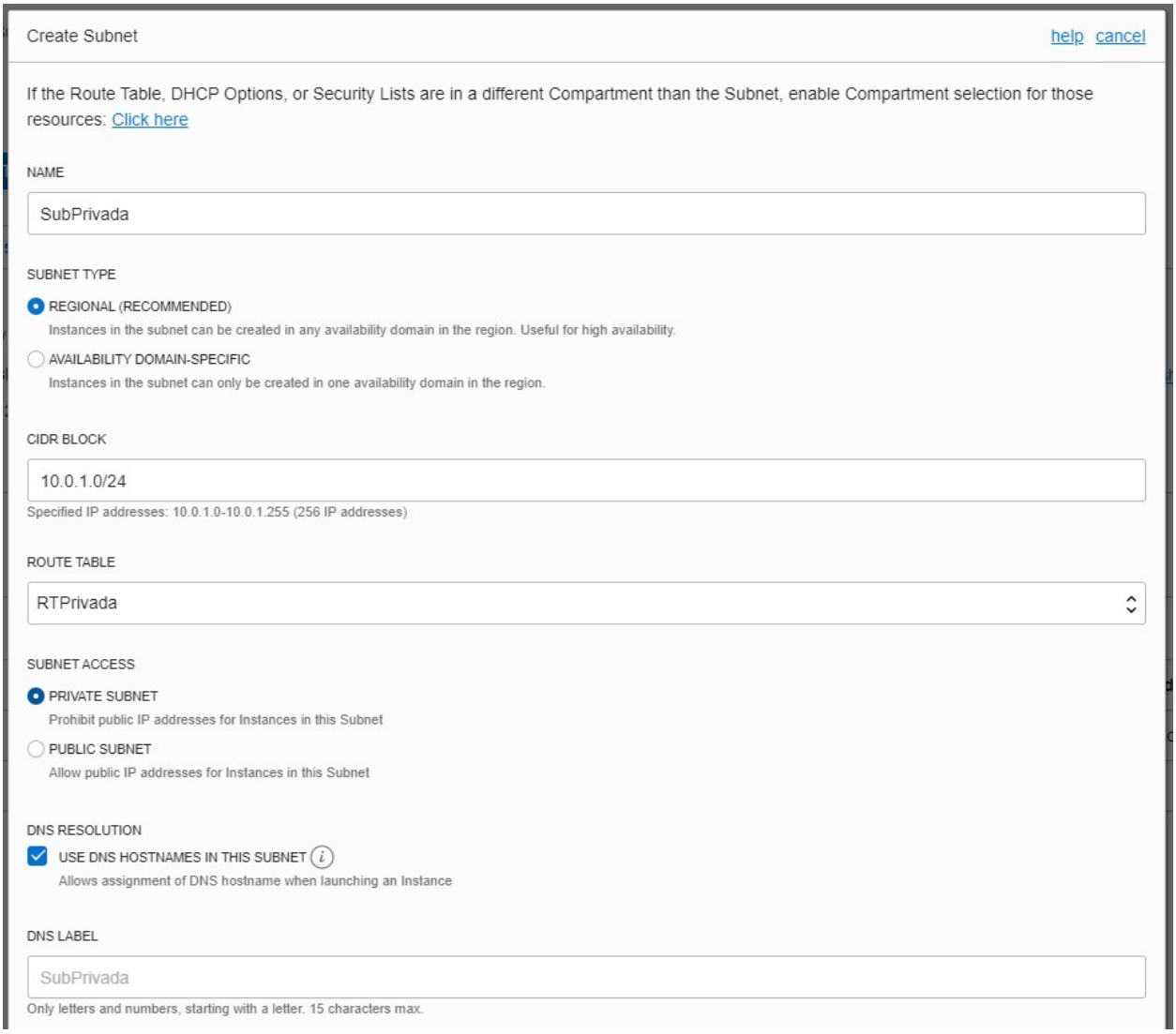


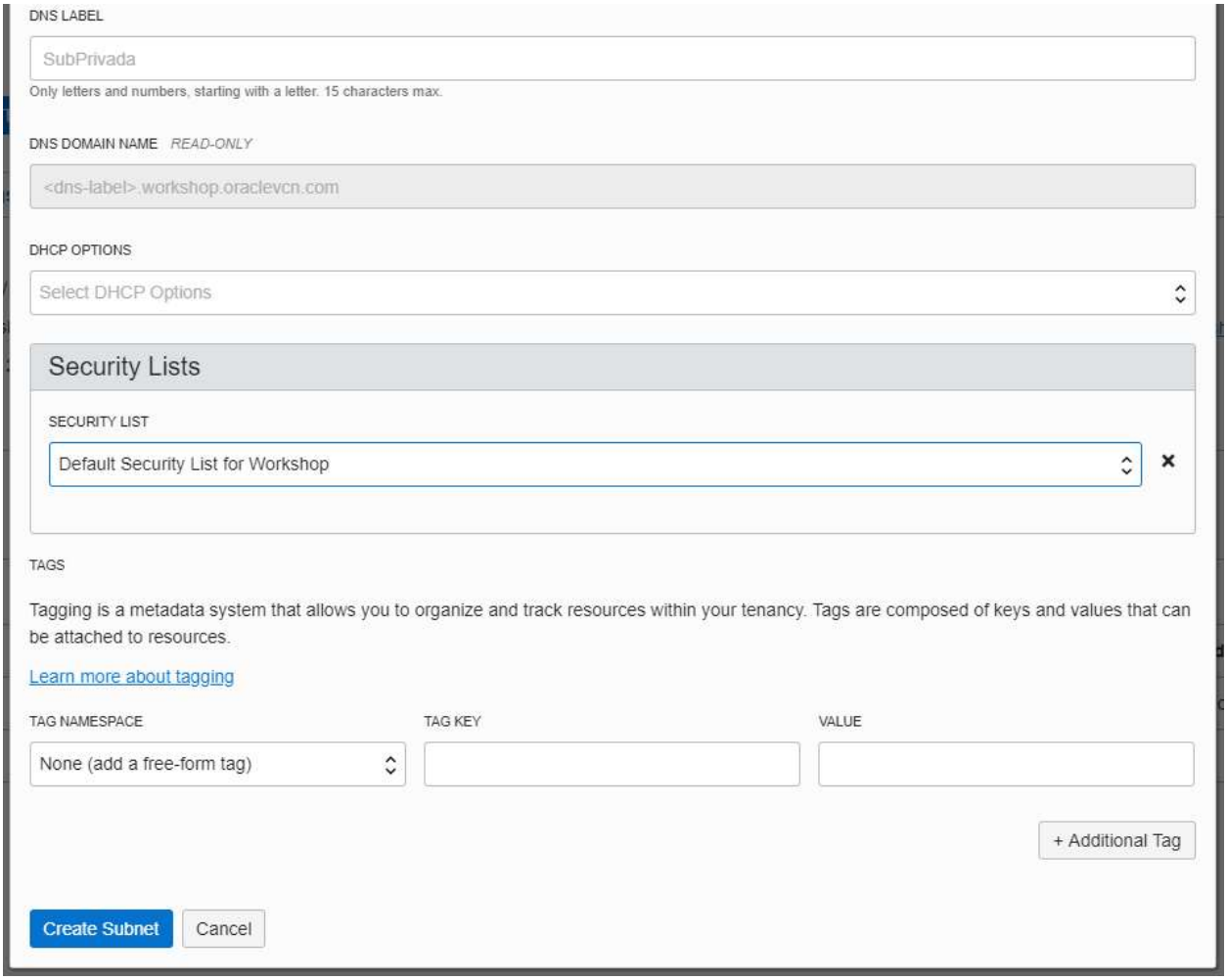
Criar subnet pública:


Create Subnet
help cancel
If the Route Table, DHCP Options, or Security Lists are in a different Compartment than the Subnet, enable Compartment selection for those resources: Click here
NAME
SubPublica
SUBNET TYPE
REGIONAL (RECOMMENDED)
Instances in the subnet can be created in any availability domain in the region. Useful for high availability.
AVAILABILITY DOMAIN-SPECIFIC
Instances in the subnet can only be created in one availability domain in the region.
CIDR BLOCK
10.0.0.0/24
Specified IP addresses: 10.0.0.0-10.0.0.255 (256 IP addresses)
ROUTE TABLE
RTPublica
SUBNET ACCESS
PRIVATE SUBNET
Prohibit public IP addresses for Instances in this Subnet
PUBLIC SUBNET
Allow public IP addresses for Instances in this Subnet
DNS RESOLUTION
USE DNS HOSTNAMES IN THIS SUBNET
Allows assignment of DNS hostname when launching an Instance
DNS LABEL
SubPublica
Only letters and numbers, starting with a letter. 15 characters max.



Criar Subnet Privada:


Create Subnet
help
cancel
If the Route Table, DHCP Options, or Security Lists are in a different Compartment than the Subnet, enable Compartment selection for those resources: Click here
NAME
SubPrivada
SUBNET TYPE
REGIONAL (RECOMMENDED)
Instances in the subnet can be created in any availability domain in the region. Useful for high availability.
AVAILABILITY DOMAIN-SPECIFIC
Instances in the subnet can only be created in one availability domain in the region.
CIDR BLOCK
10.0.1.0/24
Specified IP addresses: 10.0.1.0-10.0.1.255 (256 IP addresses)
ROUTE TABLE
RTPrivada
SUBNET ACCESS
PRIVATE SUBNET
Prohibit public IP addresses for Instances in this Subnet
PUBLIC SUBNET
Allow public IP addresses for Instances in this Subnet
DNS RESOLUTION
USE DNS HOSTNAMES IN THIS SUBNET
Allows assignment of DNS hostname when launching an Instance
DNS LABEL
SubPrivada
Only letters and numbers, starting with a letter. 15 characters max.



Criar LoadBalance:

A load balancer provides automated traffic distribution from one entry point to multiple servers in a backend set. The load balancer ensures that your services remain available by directing traffic only to healthy servers in the backend set.

LOAD BALANCER NAME

LoadBalancer

CHOOSE VISIBILITY TYPE

Public ✓
You can use the assigned public IP address as a front end for incoming traffic.

Private
You can use the assigned private IP address as a front end for internal incoming VCN traffic.

CHOOSE THE MAXIMUM TOTAL BANDWIDTH

Small ✓
100 Mbps

Medium
400 Mbps

Large
8000 Mbps

CHOOSE NETWORKING

VIRTUAL CLOUD NETWORK in **Workshop** (Change Compartment)

Workshop

To create a public load balancer, specify a single regional subnet (recommended), or two availability domain-specific subnets in different availability domains.

SUBNET in **Workshop** (Change Compartment)

SubPublica (regional)

USE NETWORK SECURITY GROUPS TO CONTROL TRAFFIC

A load balancer distributes traffic to backend servers within a backend set. A backend set is a logical entity defined by a load balancing policy, a health check policy, and a list of backend servers (Compute instances).

SPECIFY A LOAD BALANCING POLICY

Weighted Round Robin ✓
This policy distributes incoming traffic sequentially to each server in a backend set list.

IP Hash
This policy ensures that requests from a particular client are always directed to the same backend server.

Least Connections
This policy routes incoming request traffic to the backend server with the fewest active connections.

SELECT BACKEND SERVERS *OPTIONAL*

*No backend servers selected. Click **Add Backends** to select resources from a list of available Compute instances. You can choose instances from one compartment at a time. After you add instances from one compartment, you can choose **Add More Backends** to add instances from another compartment. You can also add backend servers after you create the load balancer.*

Add Backends

SPECIFY HEALTH CHECK POLICY

A health check is a test to confirm the availability of backend servers. A health check can be a request or a connection attempt. Based on a time interval you specify, the load balancer applies the health check policy to continuously monitor backend servers.

PROTOCOL: HTTP

PORT *OPTIONAL*: 80

INTERVAL IN MS *OPTIONAL*: 100000

TIMEOUT IN MS *OPTIONAL*: 3000

NUMBER OF RETRIES *OPTIONAL*: 3

STATUS CODE *OPTIONAL*: 200

URL PATH (URI): /

RESPONSE BODY REGEX *OPTIONAL*:

A listener is a logical entity that checks for incoming traffic on the load balancer's IP address. To handle TCP, HTTP and HTTPS traffic, you must configure at least one listener per traffic type. You can configure additional listeners after you create your load balancer.

LISTENER NAME

listener_HTTP

SPECIFY THE TYPE OF TRAFFIC YOUR LISTENER HANDLES

HTTPS | HTTP ✓ | TCP

SPECIFY THE PORT YOUR LISTENER MONITORS FOR INGRESS TRAFFIC

80

You can configure path route rules and custom header rule sets after you create the load balancer. For more information, see Managing Request Routing and Managing Rule Sets.

Criar Instância:

Shape e limites

VM.Standard.B1.1	n/a	n/a	2	0	2	0	2	0		

Create Compute Instance

Name your instance

Inst_01

Choose an operating system or image source

ORACLE LINUX

Oracle Linux 7.7

Image Build: 2019.09.25-0

Change Image Source

Hide Shape, Network, Storage Options

Availability Domain

AD 1 ✓
LWtI:PHX-AD-1

AD 2
LWtI:PHX-AD-2

AD 3
LWtI:PHX-AD-3

Instance Type

Virtual Machine ✓
A virtual machine is an independent computing environment that runs on top of physical bare metal hardware.

Bare Metal Machine
A bare metal compute instance gives you dedicated physical server access for highest performance and strong isolation.

Instance Shape

VM.Standard.B1.1 (Virtual Machine)
1 Core OCPU, 12 GB Memory

Change Shape

Configure networking

Virtual cloud network compartment

Workshop

yusukeyurameshi02 (root)/Workshop

Virtual cloud network

Workshop

Subnet compartment

Workshop

yusukeyurameshi02 (root)/Workshop

Subnet

SubPrivada (Regional)

Use network security groups to control traffic

Do not assign public IP address Assign public IP address

Boot volume

Default boot volume size: 46.6 GB

Custom boot volume size (in GB)

Use in-transit encryption

Choose a key from Key Management to encrypt this volume

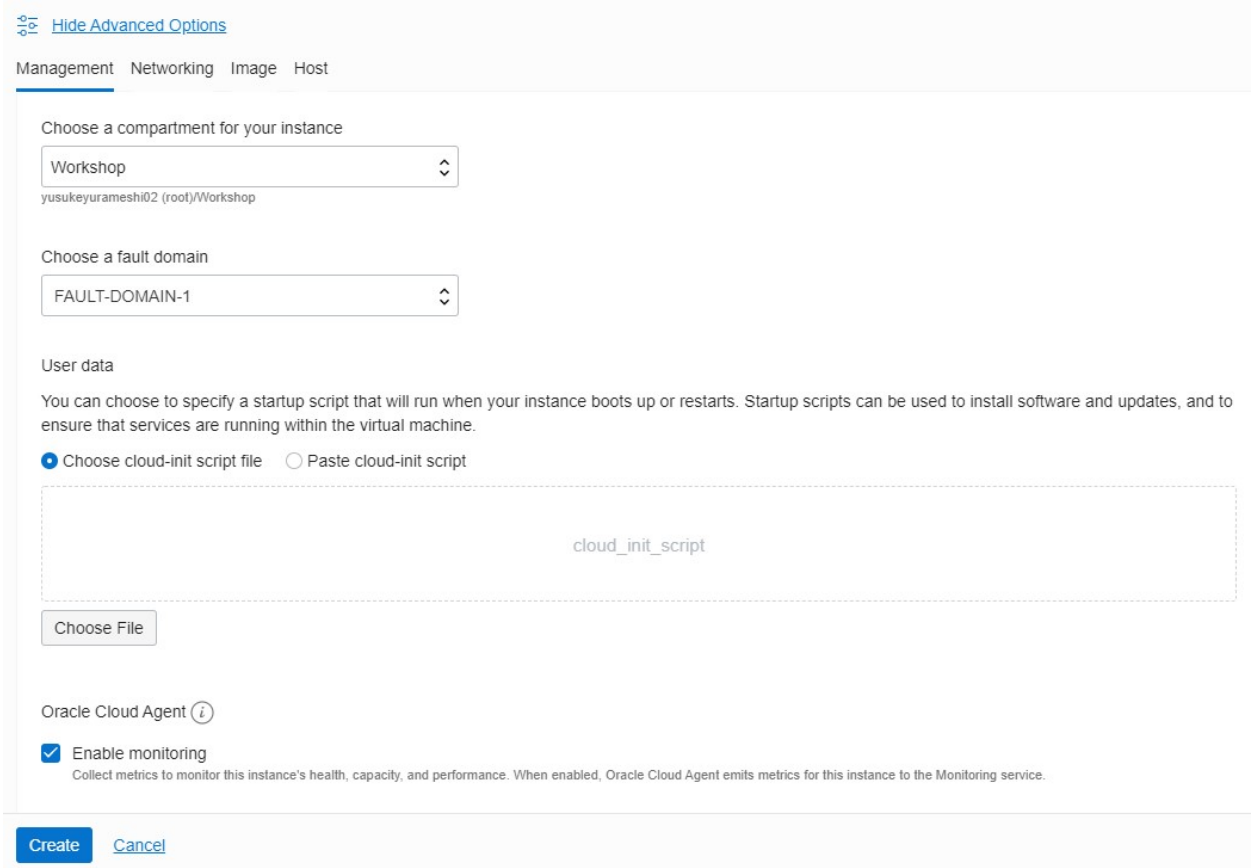
Add SSH key

Choose SSH key file Paste SSH keys

Choose SSH key file (.pub) from your computer

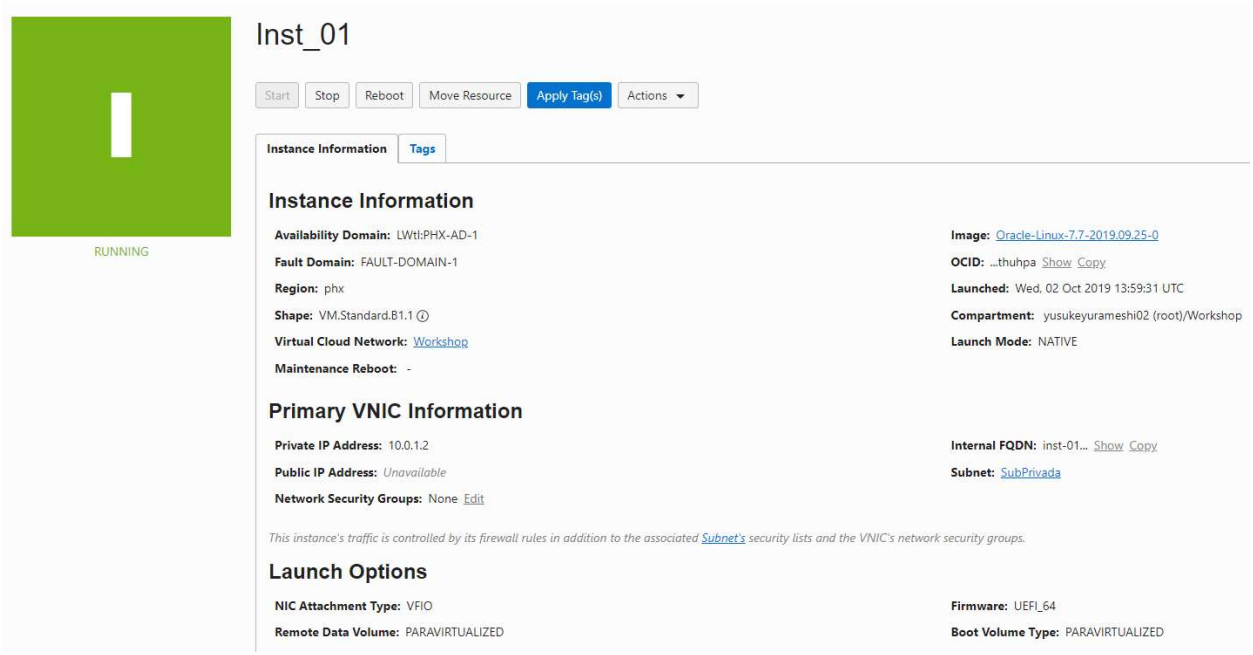
Public_key_manual.pub

Choose Files

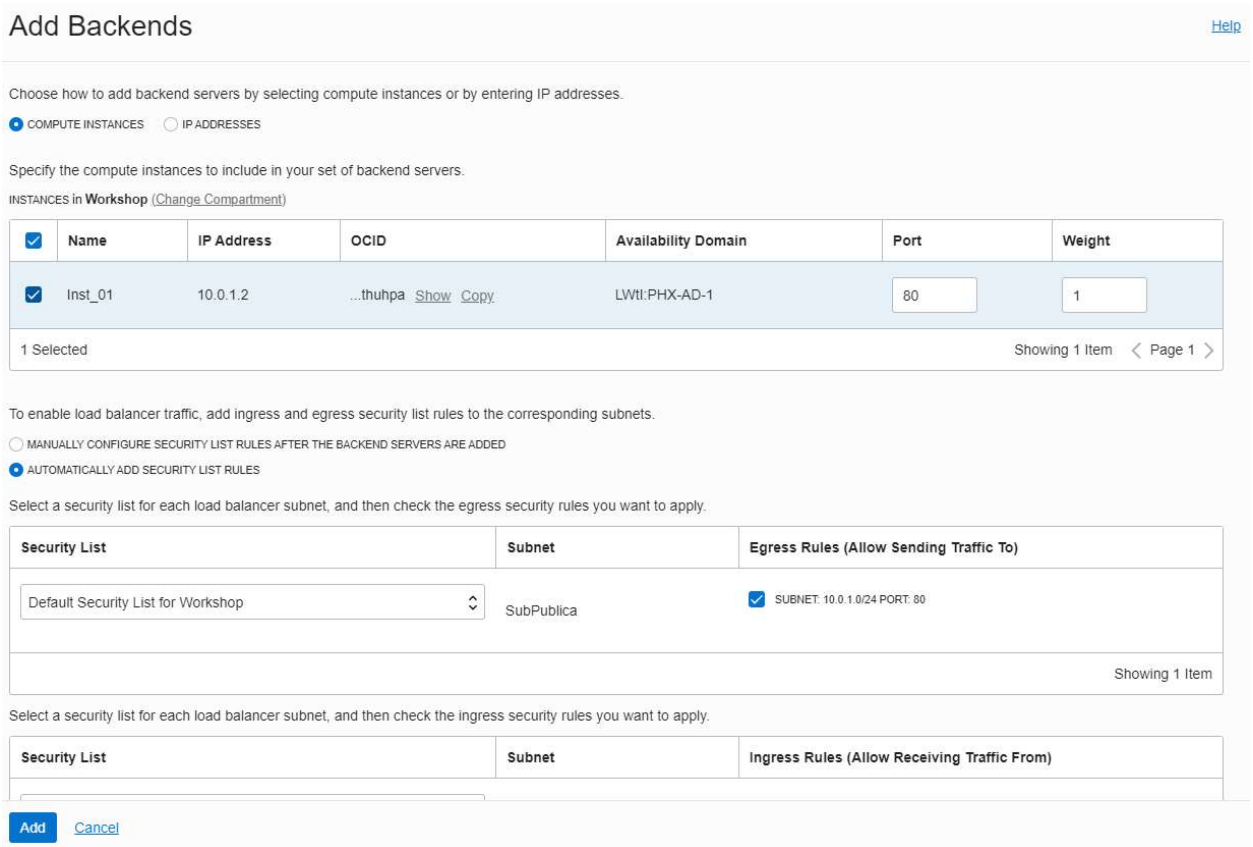


Conteúdo CloudInit Script:

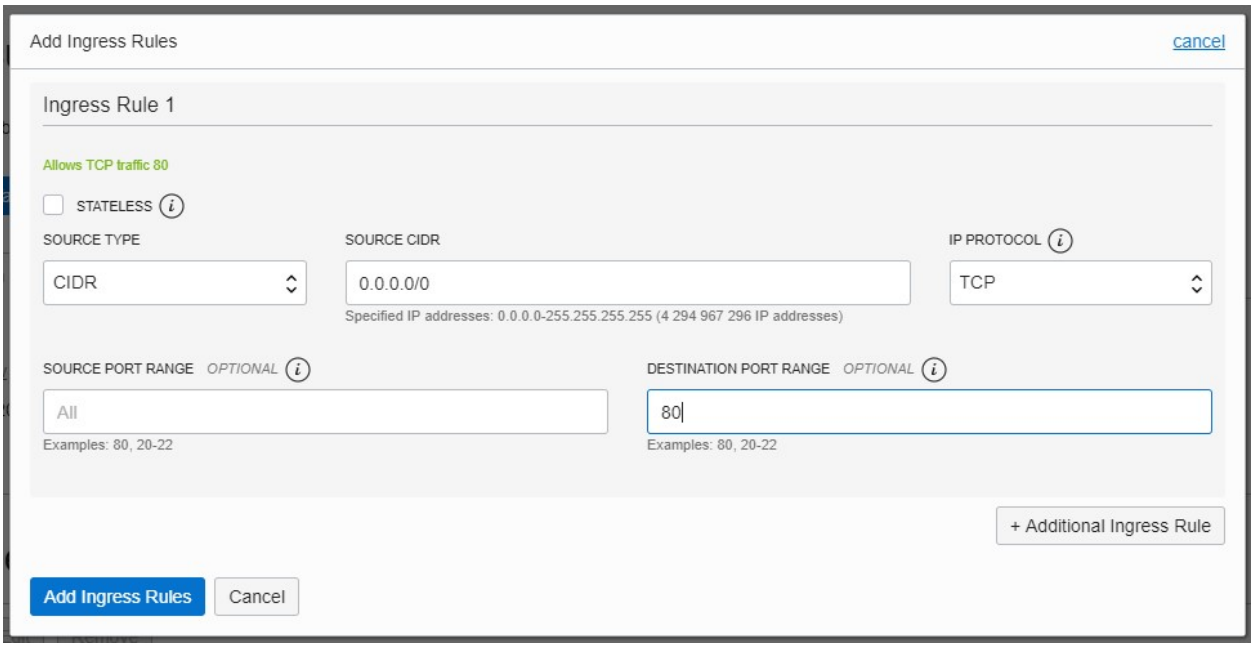
```
#!/bin/bash -x
echo '################### webserver userdata begins #####################'
touch ~opc/userdata.`date +%s`.start
# echo '########## yum update all ###############'
# yum update -y
echo '########## basic webserver ##############'
yum install -y httpd php stress
systemctl enable  httpd.service
systemctl start  httpd.service
echo '<html><head><meta http-equiv="refresh" content="3"></head><body><pre><code>
<?php
echo gethostname();
$ip_server = $_SERVER['SERVER_ADDR'];
echo "<br><h1><b>Server IP Address is: $ip_server</b></h1><br>";
?>' >> /var/www/html/index.php
echo '' >> /var/www/html/index.php
cat /etc/os-release >> /var/www/html/index.php
echo '</code></pre></body></html>' >> /var/www/html/index.php
firewall-offline-cmd --add-service=http
systemctl enable  firewalld
systemctl restart  firewalld
touch ~opc/userdata.`date +%s`.finish
echo '################### webserver userdata ends ######################'
```



Atualizar o LoadBalancer:

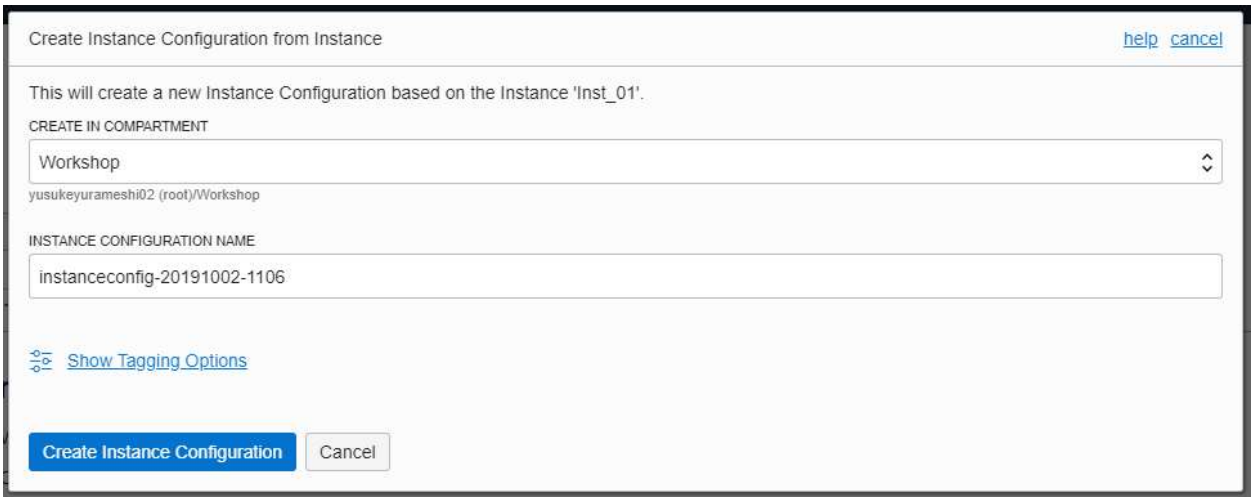


Atualizar a Security List:

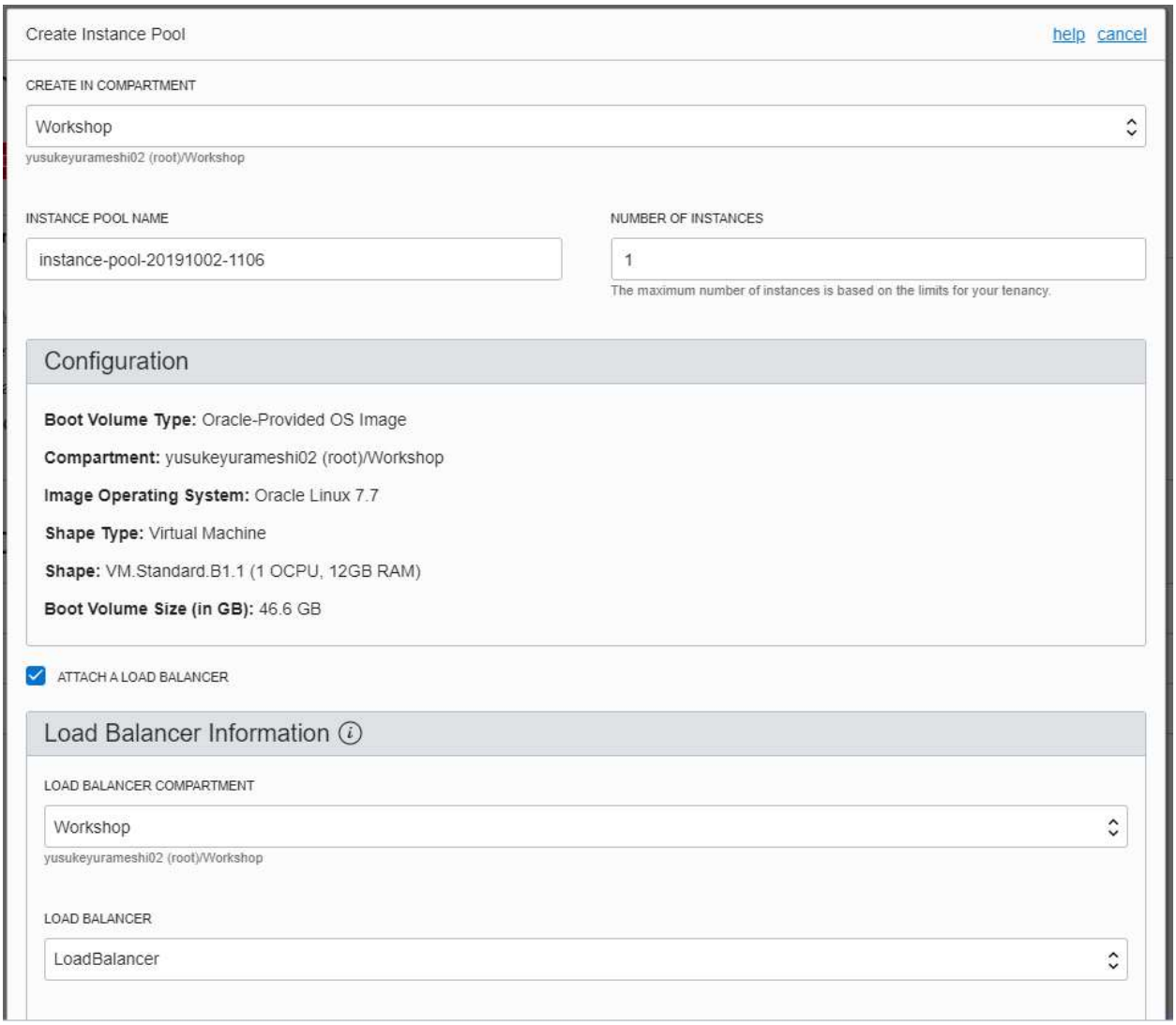


Acessar o IP do LoadBalancer:

Criar Instance Configuration:



Criar Instance Pool:


Create Instance Pool
help
cancel
CREATE IN COMPARTMENT
Workshop
yusukeyurameshi02 (root)/Workshop
INSTANCE POOL NAME
instance-pool-20191002-1106
NUMBER OF INSTANCES
1
The maximum number of instances is based on the limits for your tenancy.
Configuration
Boot Volume Type: Oracle-Provided OS Image
Compartment: yusukeyurameshi02 (root)/Workshop
Image Operating System: Oracle Linux 7.7
Shape Type: Virtual Machine
Shape: VM.Standard.B1.1 (1 OCPU, 12GB RAM)
Boot Volume Size (in GB): 46.6 GB
ATTACH A LOAD BALANCER
Load Balancer Information
LOAD BALANCER COMPARTMENT
Workshop
yusukeyurameshi02 (root)/Workshop
LOAD BALANCER
LoadBalancer

BACKEND SET

bs_lb_2019-1002-1050

PORT

80

VNIC

Primary VNIC

Availability Domain Selection 1

AVAILABILITY DOMAIN

AD 1

Primary VNIC

VIRTUAL CLOUD NETWORK COMPARTMENT

Workshop

yusukeyurameshi02 (root)/Workshop

VIRTUAL CLOUD NETWORK

Workshop

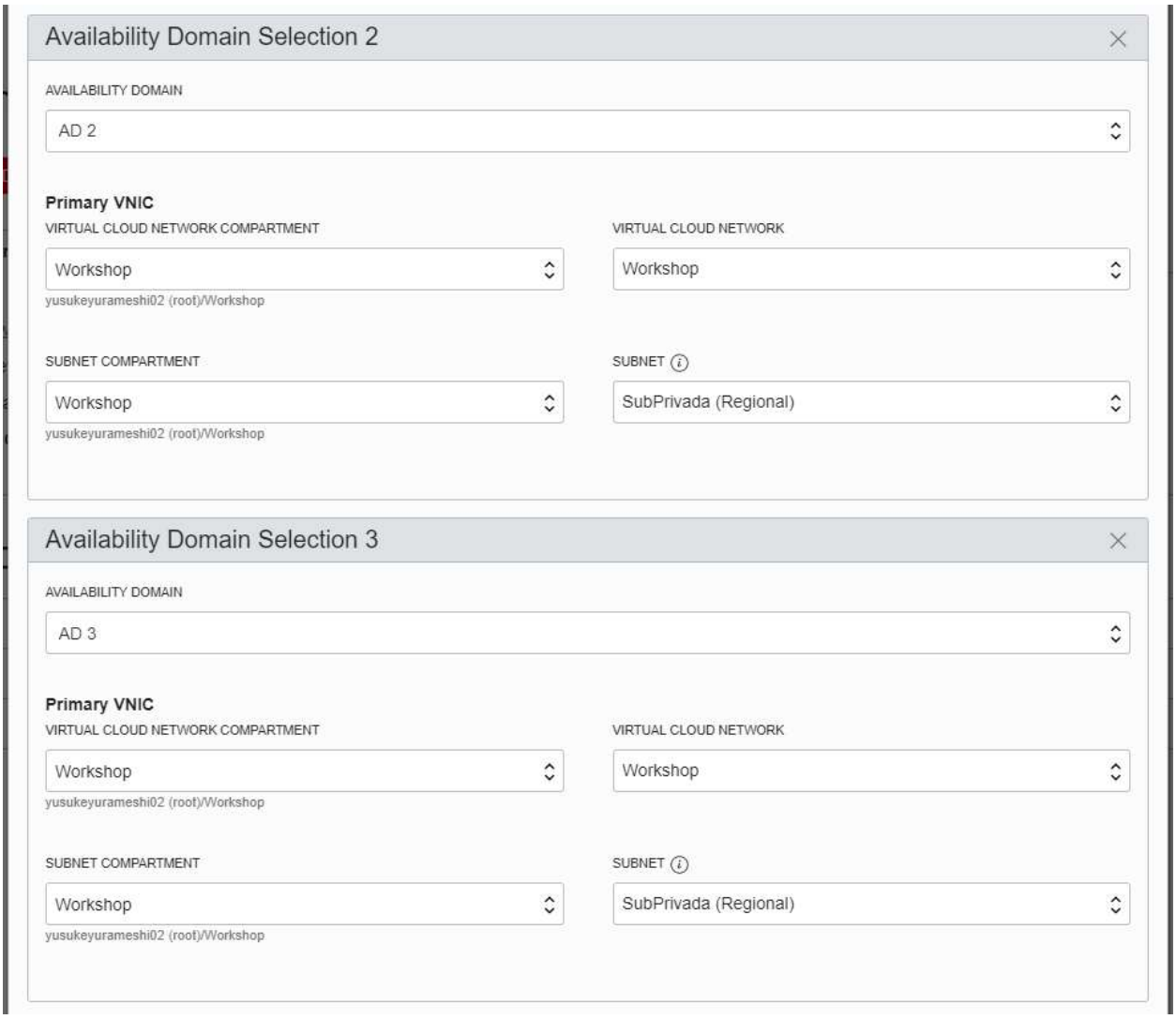
SUBNET COMPARTMENT

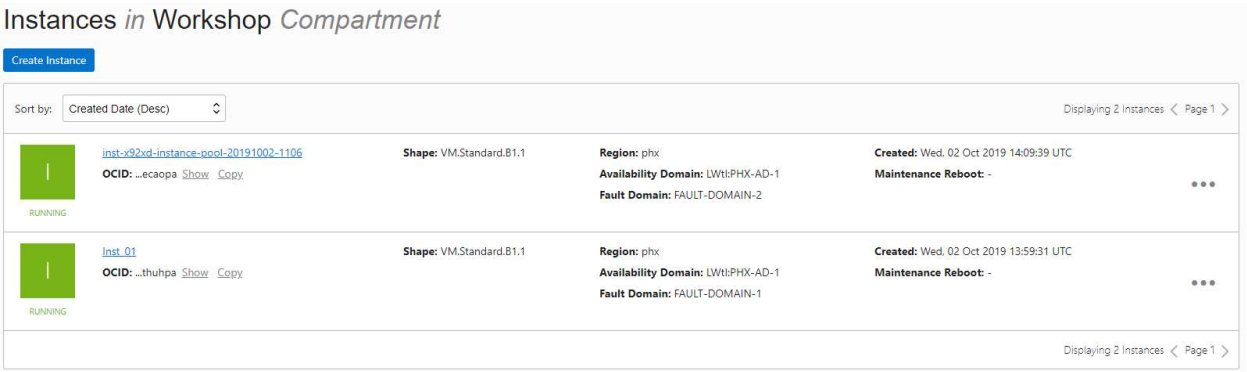
Workshop

yusukeyurameshi02 (root)/Workshop

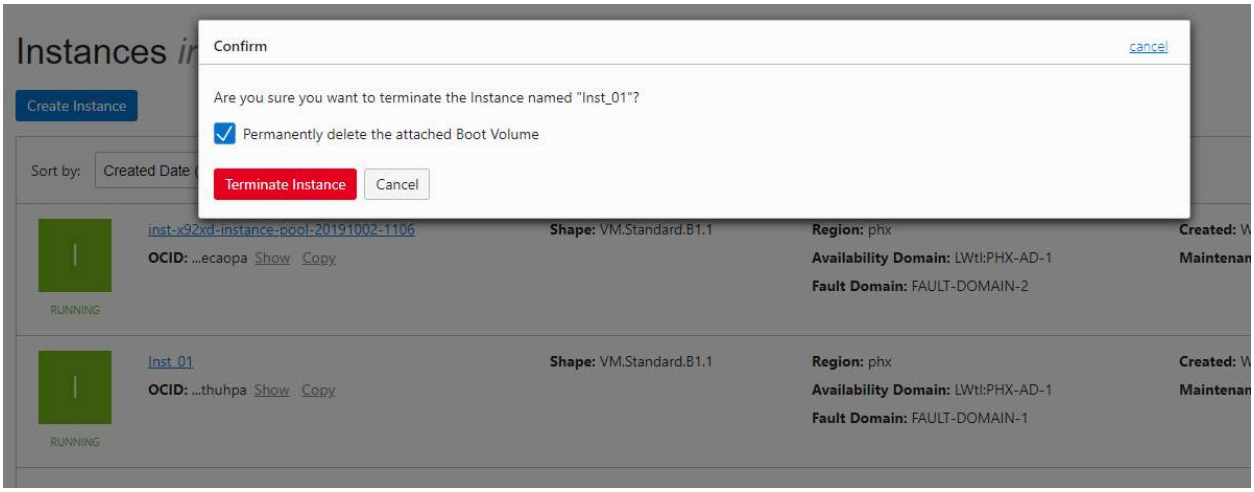
SUBNET

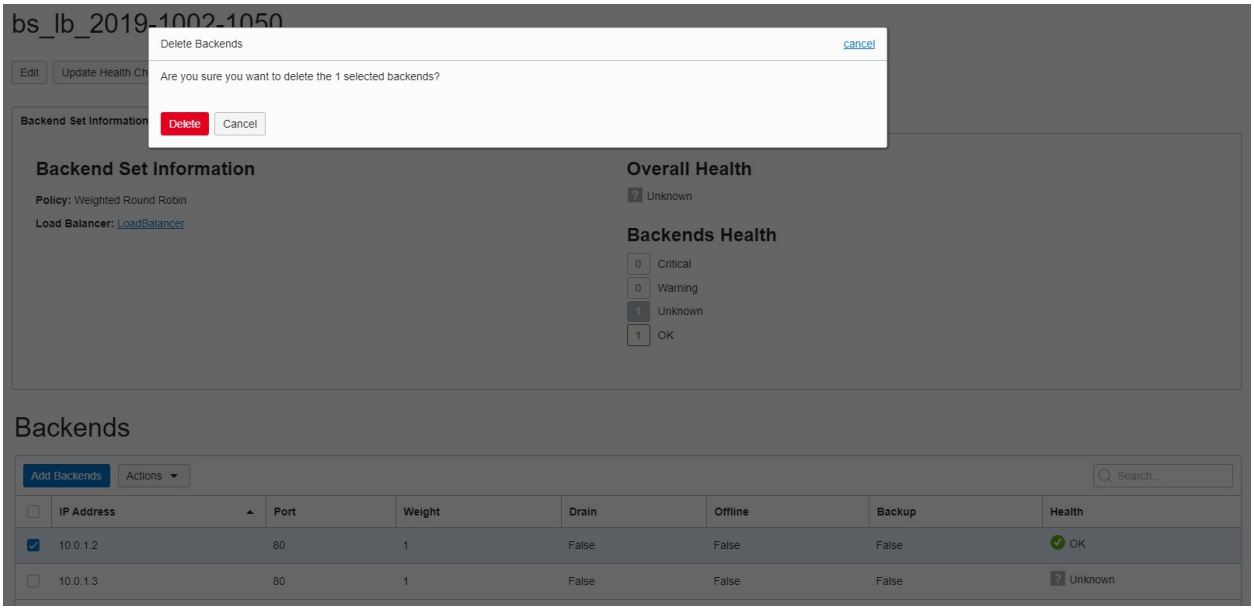
SubPrivada (Regional)





Terminar a instância original e retirar do load balancer:


Instances in
Create Instance
Sort by:
Created Date
Confirm
cancel
Are you sure you want to terminate the Instance named "Inst_01"?
Permanently delete the attached Boot Volume
Terminate Instance
Cancel
inst-x92xd-instance-pool-20191002-1106
OCID: ...ecaopa Show Copy
Shape: VM.Standard.B1.1
Region: phx
Availability Domain: LWtI:PHX-AD-1
Fault Domain: FAULT-DOMAIN-2
RUNNING
Inst_01
OCID: ...thuhpa Show Copy
Shape: VM.Standard.B1.1
Region: phx
Availability Domain: LWtI:PHX-AD-1
Fault Domain: FAULT-DOMAIN-1
RUNNING


bs_lb_2019-1002-1050
Delete Backends
cancel
Are you sure you want to delete the 1 selected backends?
Delete
Cancel
Edit
Backend Set Information
Backend Set Information
Policy: Weighted Round Robin
Load Balancer: LoadBalancer
Overall Health
Unknown
Backends Health
0 Critical
0 Warning
1 Unknown
1 OK
Backends
Add Backends
Actions
Search...
IP Address
Port
Weight
Drain
Offline
Backup
Health
10.0.1.2
80
1
False
False
False
OK
10.0.1.3
80
1
False
False
False
Unknown

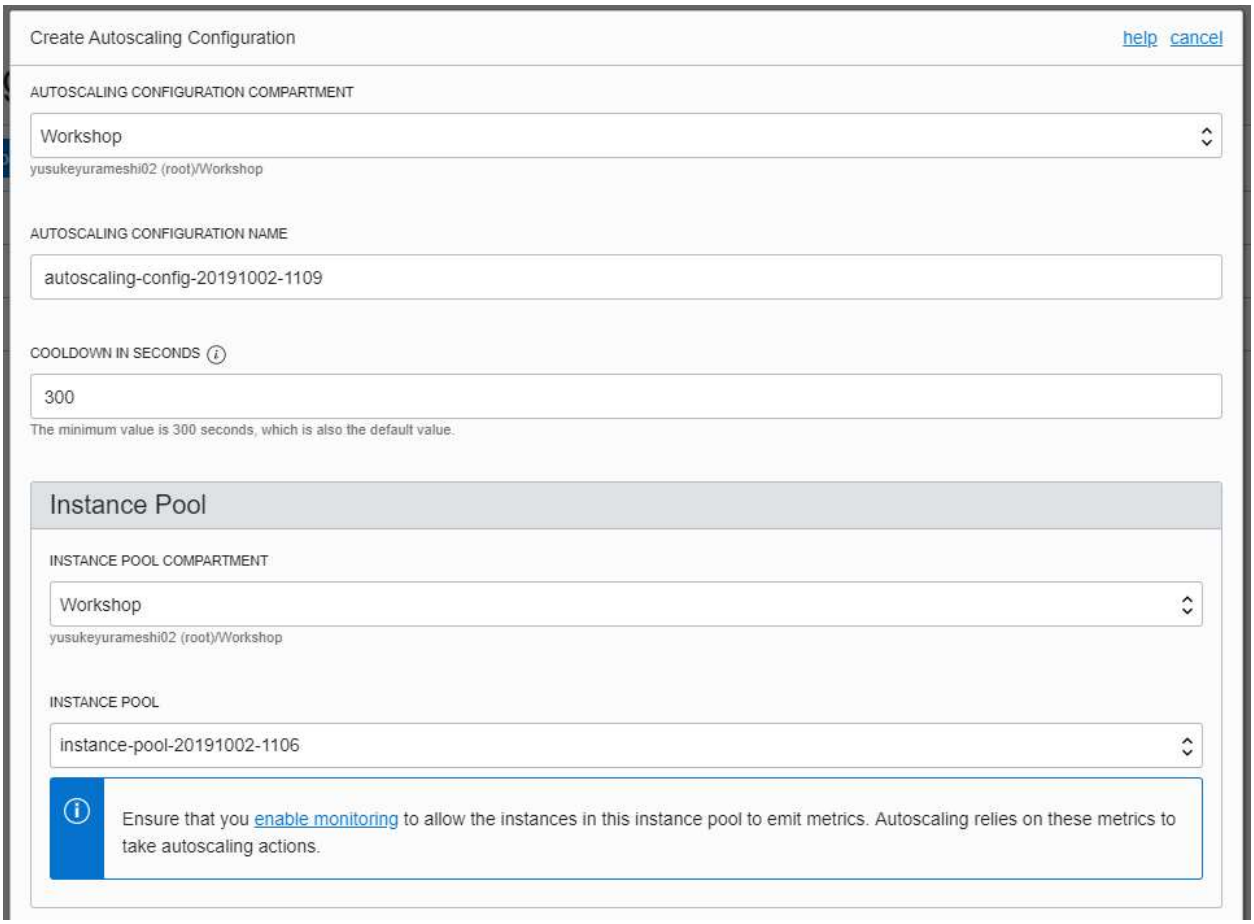
inst-01-7685

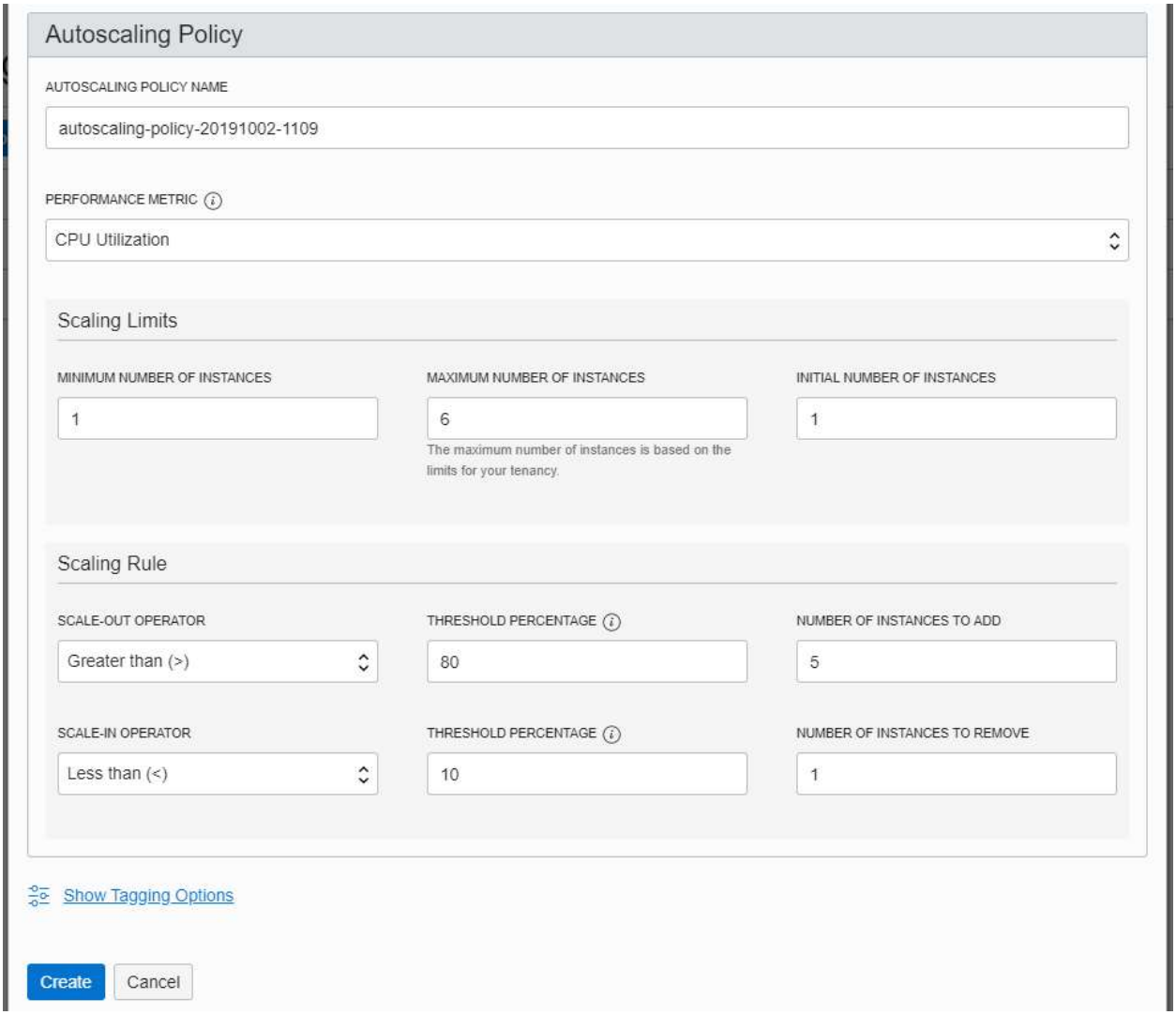
Server IP Address is: 10.0.1.3

```
NAME="Oracle Linux Server"
VERSION="7.7"
ID="ol"
ID_LIKE="fedora"
VARIANT="Server"
VARIANT_ID="server"
VERSION_ID="7.7"
PRETTY_NAME="Oracle Linux Server 7.7"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:oracle:linux:7:7:server"
HOME_URL="https://linux.oracle.com/"
BUG_REPORT_URL="https://bugzilla.oracle.com/"

ORACLE_BUGZILLA_PRODUCT="Oracle Linux 7"
ORACLE_BUGZILLA_PRODUCT_VERSION=7.7
ORACLE_SUPPORT_PRODUCT="Oracle Linux"
ORACLE_SUPPORT_PRODUCT_VERSION=7.7
```

Criar Autoscaling Configuration:


Create Autoscaling Configuration
help cancel
AUTOSCALING CONFIGURATION COMPARTMENT
Workshop
yusukeyurameshi02 (root)/Workshop
AUTOSCALING CONFIGURATION NAME
autoscaling-config-20191002-1109
COOLDOWN IN SECONDS
300
The minimum value is 300 seconds, which is also the default value.
Instance Pool
INSTANCE POOL COMPARTMENT
Workshop
yusukeyurameshi02 (root)/Workshop
INSTANCE POOL
instance-pool-20191002-1106
Ensure that you enable monitoring to allow the instances in this instance pool to emit metrics. Autoscaling relies on these metrics to take autoscaling actions.



Criar Instancia para acesso a rede privada:

Create Compute Instance

Name your instance

jumpserver

Choose an operating system or image source

Oracle Linux 7.7
Image Build: 2019.09.25-0

Change Image Source

Hide Shape, Network, Storage Options

Availability Domain

AD 1
LWtI:PHX-AD-1

AD 2
LWtI:PHX-AD-2

AD 3
LWtI:PHX-AD-3

Instance Type

Virtual Machine
A virtual machine is an independent computing environment that runs on top of physical bare metal hardware.

Bare Metal Machine
A bare metal compute instance gives you dedicated physical server access for highest performance and strong isolation.

Create Compute Instance

Instance Shape

VM.Standard2.1 (Virtual Machine)
1 Core OCPU, 15 GB Memory

Change Shape

Configure networking

Virtual cloud network compartment

Workshop

yusukeyurameshi02 (root)/Workshop

Virtual cloud network

Workshop

Subnet compartment

Workshop

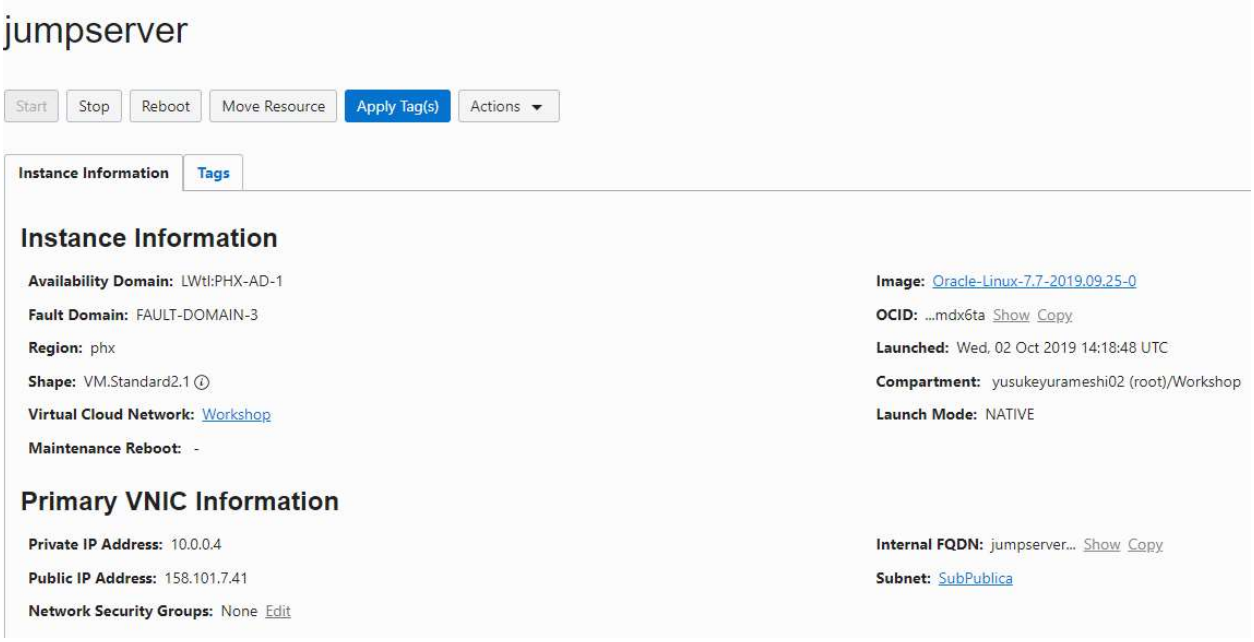
yusukeyurameshi02 (root)/Workshop

Subnet

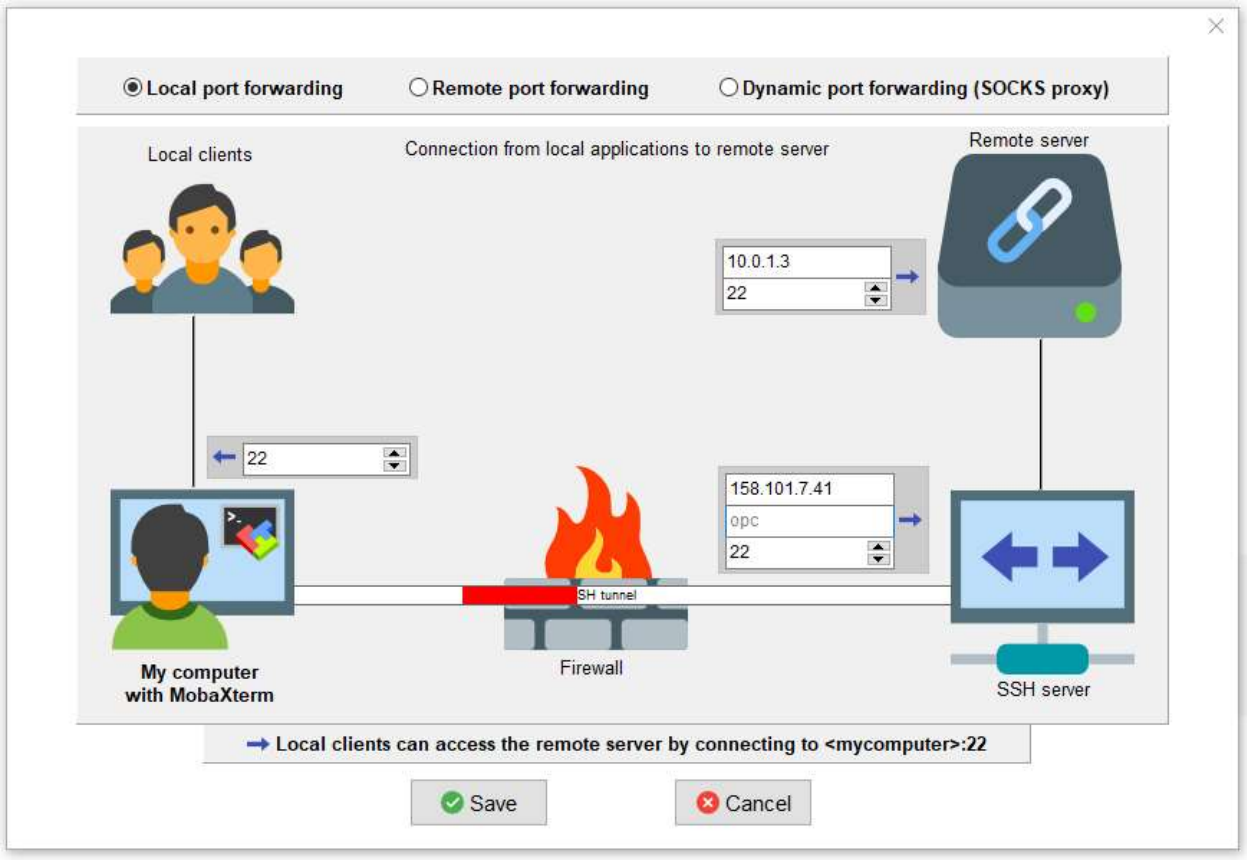
SubPublica (Regional)

Use network security groups to control traffic

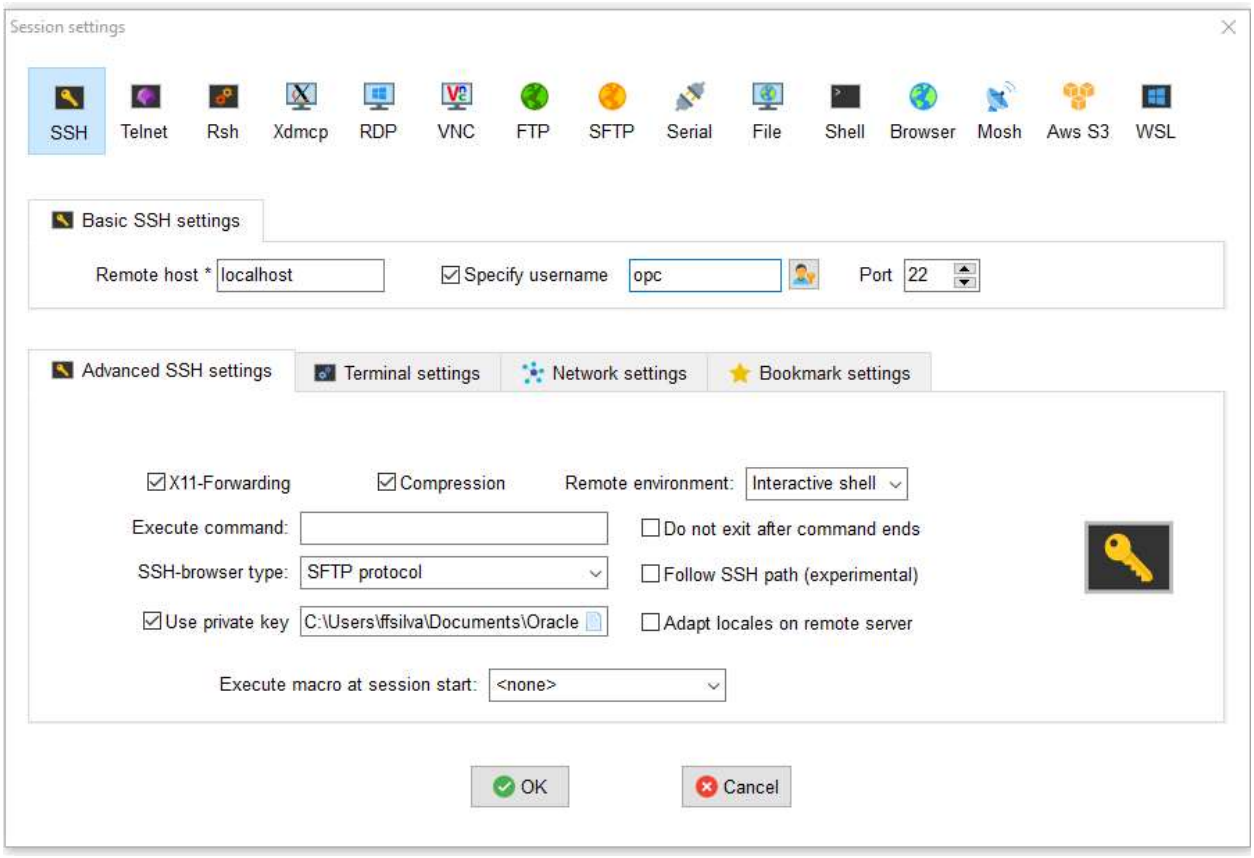
Do not assign public IP address Assign public IP address



Montar tunel ssh:



Acessar o JumpServer:



Gerar 100% de cpu na instância web:

```
[opc@inst-01-7685 ~]$ stress --cpu 2
stress: info: [11990] dispatching hogs: 2 cpu, 0 io, 0 vm, 0 hdd
```

Instâncias sendo criadas automaticamente:

Instances *in* Workshop *Compartment*

Create Instance

Sort by: Created Date (Desc) — Displaying 8 Instances — Page 1

PROVISIONING...	inst-fbjrn-instance-pool-20191002-1106 **OCID:** ...625cva Show Copy	**Shape:** VM.Standard.B1.1	**Region:** phx **Availability Domain:** LWtl:PHX-AD-2 **Fault Domain:** FAULT-DOMAIN-1	**Created:** Wed, 02 Oct 2019 14:30:45 UTC **Maintenance Reboot:** -
PROVISIONING...	inst-epuqi-instance-pool-20191002-1106 **OCID:** ...5usaxq Show Copy	**Shape:** VM.Standard.B1.1	**Region:** phx **Availability Domain:** LWtl:PHX-AD-2 **Fault Domain:** FAULT-DOMAIN-3	**Created:** Wed, 02 Oct 2019 14:30:42 UTC **Maintenance Reboot:** -
PROVISIONING...	inst-6zahq-instance-pool-20191002-1106 **OCID:** ...yanwda Show Copy	**Shape:** VM.Standard.B1.1	**Region:** phx **Availability Domain:** LWtl:PHX-AD-3 **Fault Domain:** FAULT-DOMAIN-2	**Created:** Wed, 02 Oct 2019 14:30:40 UTC **Maintenance Reboot:** -
PROVISIONING...	inst-4ubdj-instance-pool-20191002-1106 **OCID:** ...r25qna Show Copy	**Shape:** VM.Standard.B1.1	**Region:** phx **Availability Domain:** LWtl:PHX-AD-3 **Fault Domain:** FAULT-DOMAIN-1	**Created:** Wed, 02 Oct 2019 14:30:37 UTC **Maintenance Reboot:** -
PROVISIONING...	inst-rwnni-instance-pool-20191002-1106 **OCID:** ...b6pauq Show Copy	**Shape:** VM.Standard.B1.1	**Region:** phx **Availability Domain:** LWtl:PHX-AD-1 **Fault Domain:** FAULT-DOMAIN-3	**Created:** Wed, 02 Oct 2019 14:30:37 UTC **Maintenance Reboot:** -

Load Balancer Funcionando:

Backends

Add Backends — Actions — Search...

IP Address	Port	Weight	Drain	Offline	Backup	Health
10.0.1.3	80	1	False	False	False	OK
10.0.1.4	80	1	False	False	False	Unknown
10.0.1.5	80	1	False	False	False	Unknown
10.0.1.6	80	1	False	False	False	Unknown
10.0.1.7	80	1	False	False	False	Unknown
10.0.1.8	80	1	False	False	False	Unknown

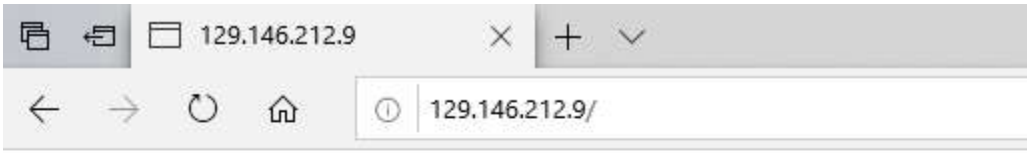
0 Selected — Showing 6 Items — Page 1

inst-01-7685

Server IP Address is: 10.0.1.3

```
NAME="Oracle Linux Server"
VERSION="7.7"
ID="ol"
ID_LIKE="fedora"
VARIANT="Server"
VARIANT_ID="server"
VERSION_ID="7.7"
PRETTY_NAME="Oracle Linux Server 7.7"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:oracle:linux:7:7:server"
HOME_URL="https://linux.oracle.com/"
BUG_REPORT_URL="https://bugzilla.oracle.com/"

ORACLE_BUGZILLA_PRODUCT="Oracle Linux 7"
ORACLE_BUGZILLA_PRODUCT_VERSION=7.7
ORACLE_SUPPORT_PRODUCT="Oracle Linux"
ORACLE_SUPPORT_PRODUCT_VERSION=7.7
```



inst-01-3825

Server IP Address is: 10.0.1.5

```
NAME="Oracle Linux Server"
VERSION="7.7"
ID="ol"
ID_LIKE="fedora"
VARIANT="Server"
VARIANT_ID="server"
VERSION_ID="7.7"
PRETTY_NAME="Oracle Linux Server 7.7"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:oracle:linux:7:7:server"
HOME_URL="https://linux.oracle.com/"
BUG_REPORT_URL="https://bugzilla.oracle.com/"

ORACLE_BUGZILLA_PRODUCT="Oracle Linux 7"
ORACLE_BUGZILLA_PRODUCT_VERSION=7.7
ORACLE_SUPPORT_PRODUCT="Oracle Linux"
ORACLE_SUPPORT_PRODUCT_VERSION=7.7
```