

# Kit-U

## Roteiro 4

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CheckPoint -Admin:

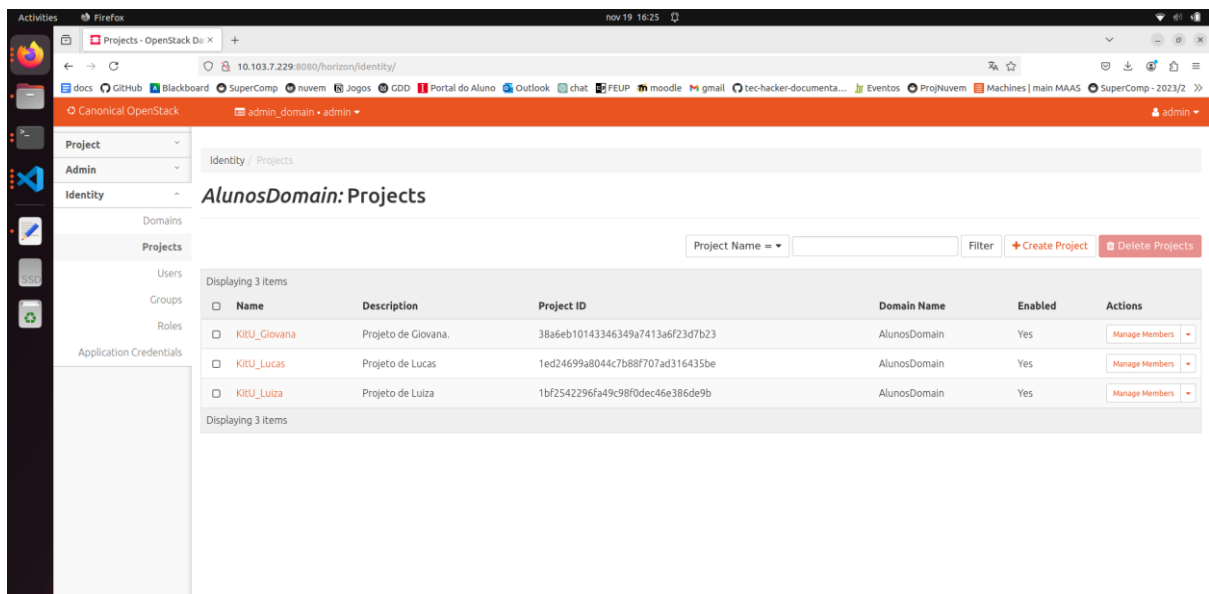


Figura 1 Aba Identity projects no OpenStack.

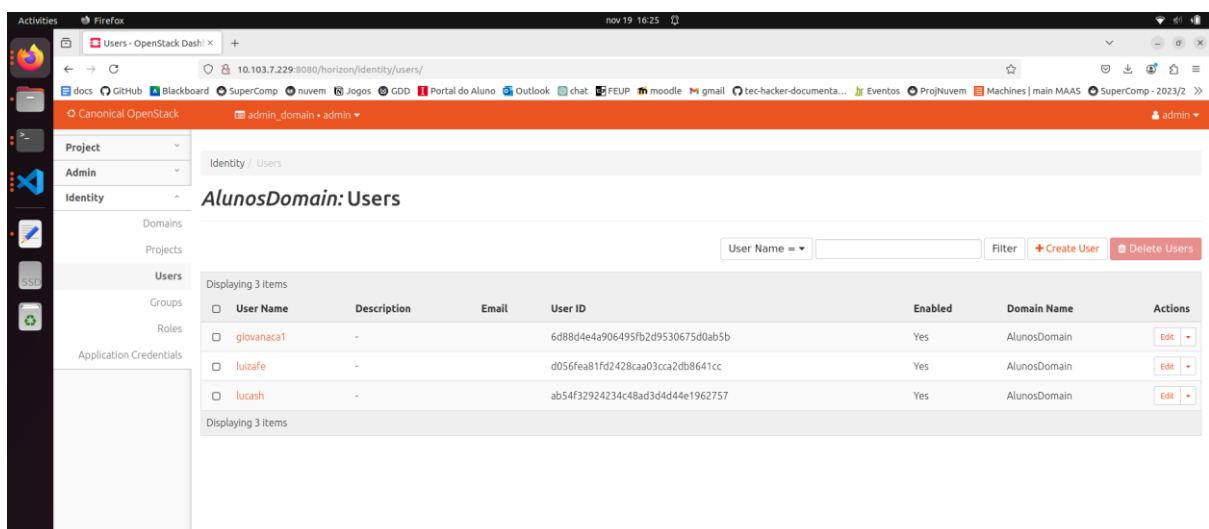


Figura 2 Aba Identity users no OpenStack.

CheckPoint -Giovana:

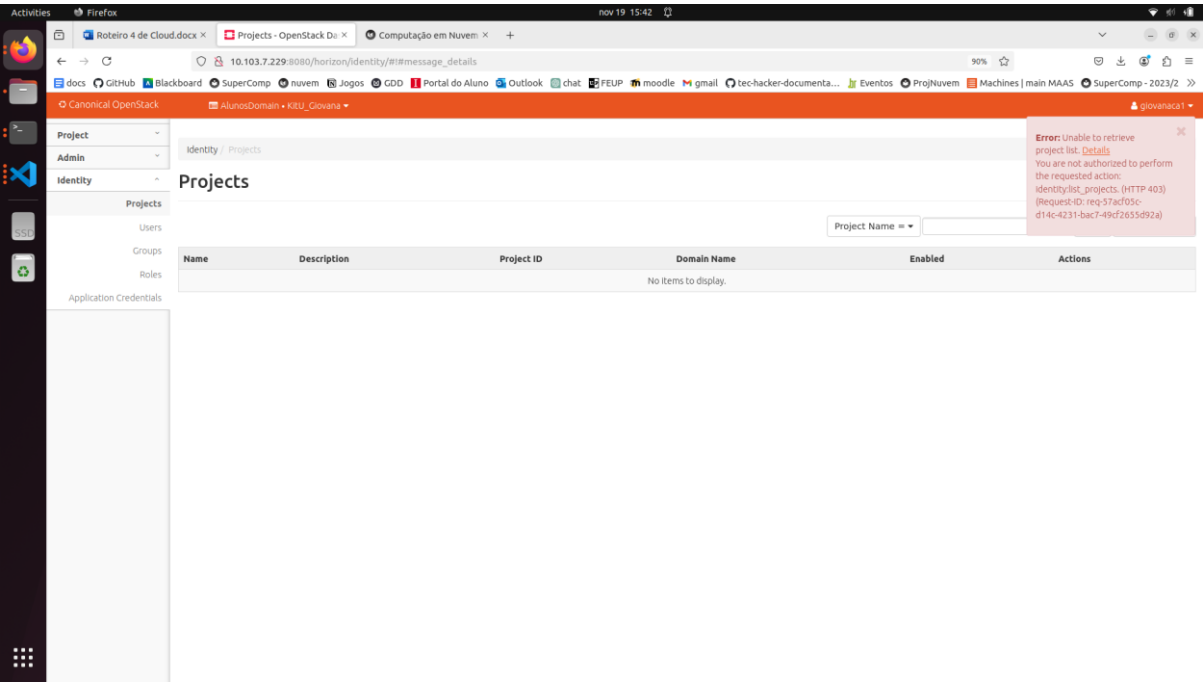


Figura 3 Aba Identity projects no OpenStack – Giovana.

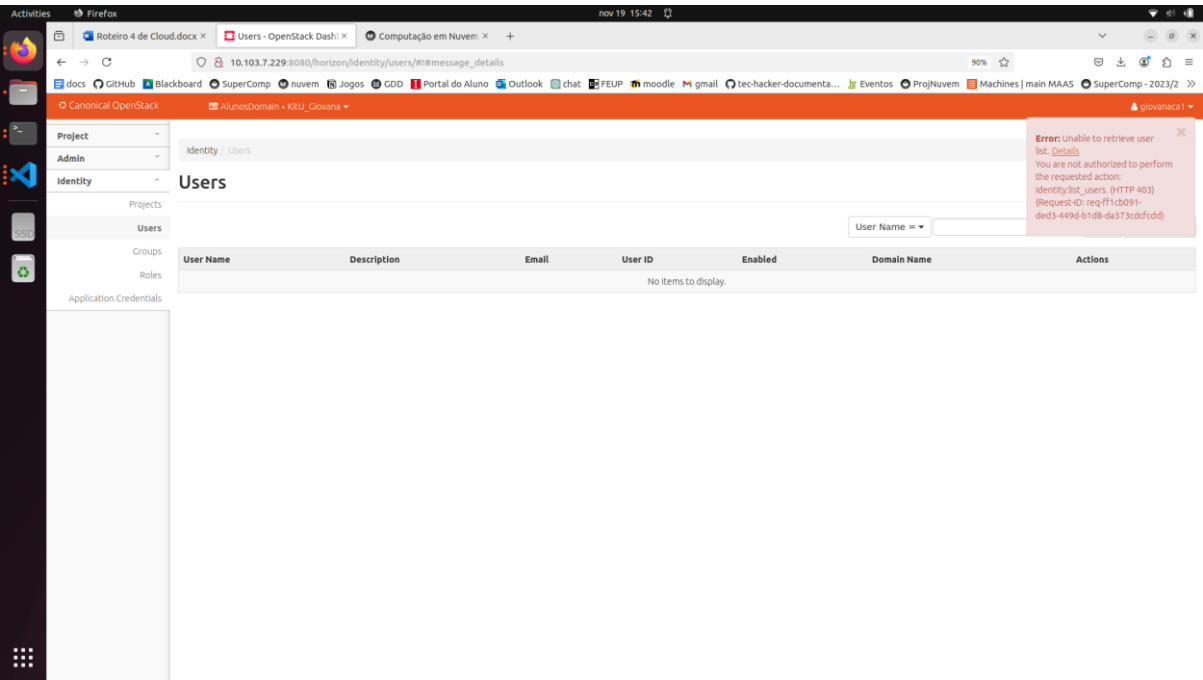


Figura 4 Aba Identity users no OpenStack – Giovana.

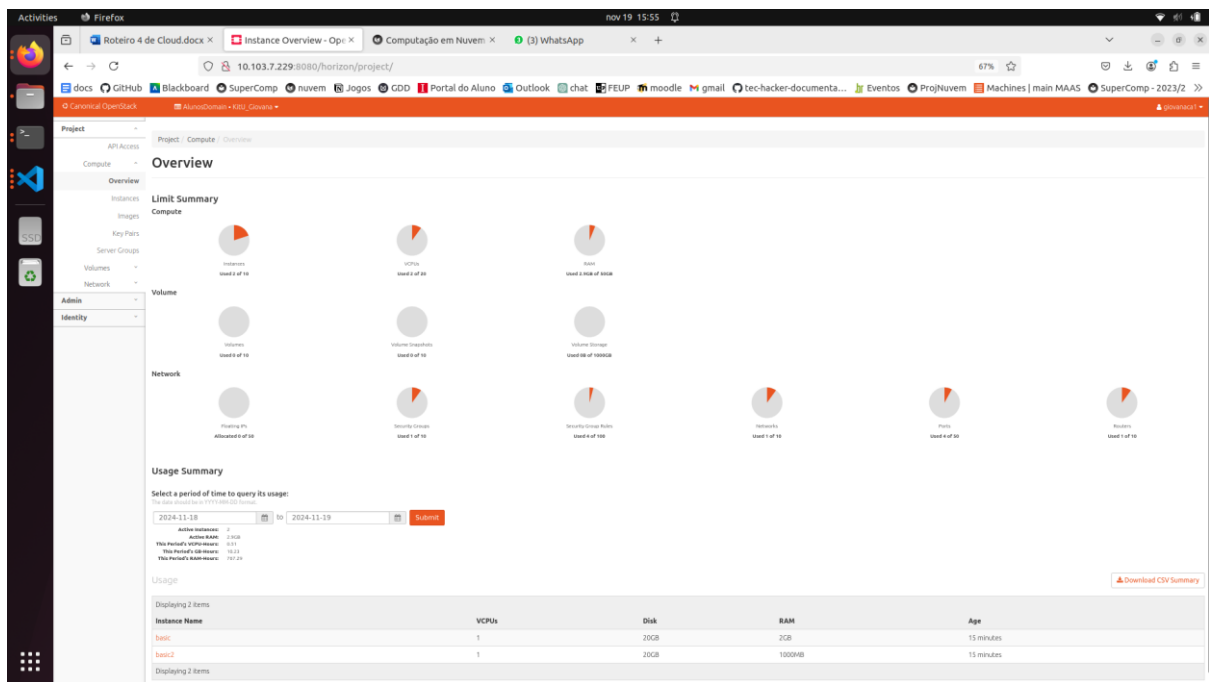


Figura 5 Aba Compute Overview no OpenStack – Giovana.

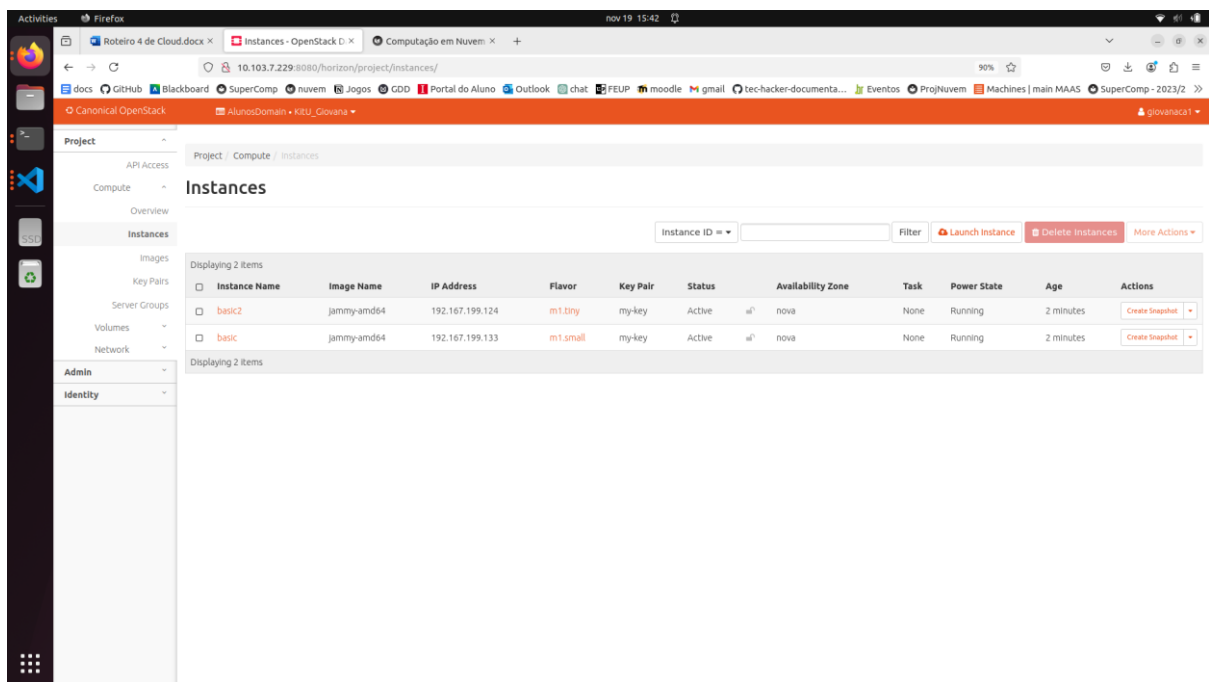


Figura 6 Aba Compute Instances no OpenStack – Giovana.

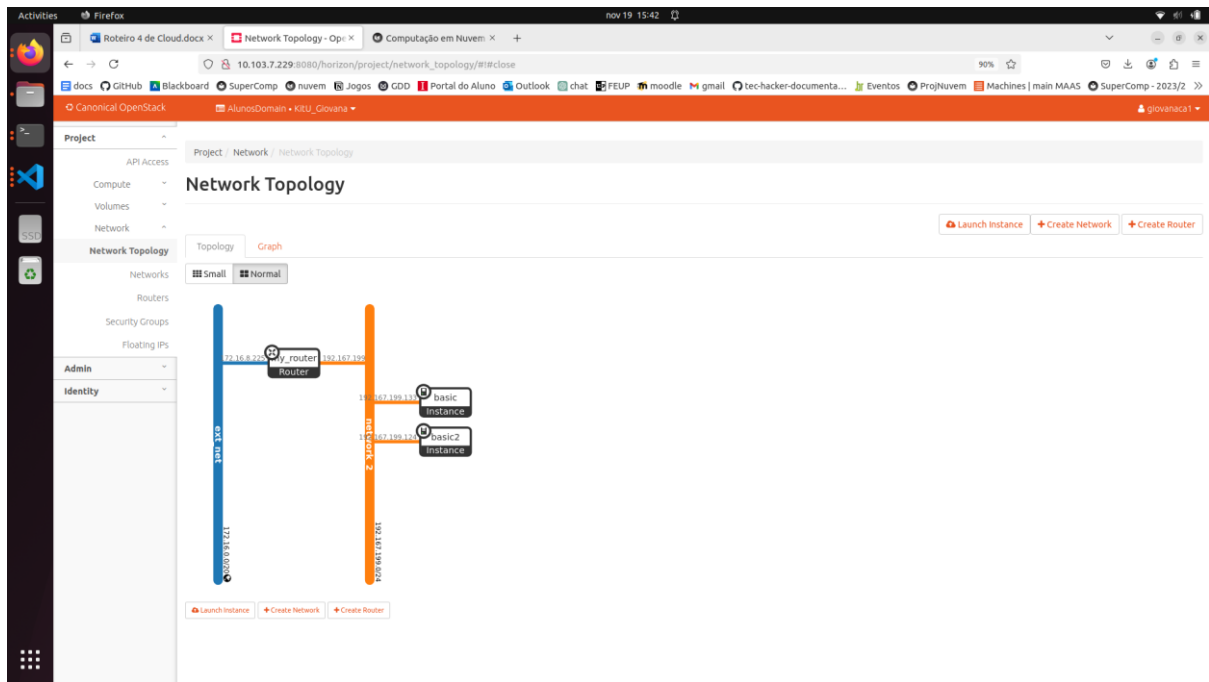


Figura 7 Aba Network Topology no OpenStack – Giovana.

```

cloud@main: ~
+ image_name      = "jammy-and64"
+ key_pair        = "my-key"
+ name            = "basic2"
+ power_state     = "active"
+ region          = (known after apply)
+ security_groups = [
  + "default",
]
+ stop_before_destroy = false

+ network {
  + access_network = false
  + fixed_ip_v4     = (known after apply)
  + fixed_ip_v6     = (known after apply)
  + floating_ip     = (known after apply)
  + mac             = (known after apply)
  + name            = "network_2"
  + port            = (known after apply)
  + uuid            = (known after apply)
}

Plan: 2 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

  Enter a value: yes

openstack_compute_instance_v2.instancia_1: Creating...
openstack_compute_instance_v2.instancia_2: Creating...
openstack_compute_instance_v2.instancia_1: Still creating... [10s elapsed]
openstack_compute_instance_v2.instancia_2: Still creating... [10s elapsed]
openstack_compute_instance_v2.instancia_1: Still creating... [20s elapsed]
openstack_compute_instance_v2.instancia_2: Still creating... [20s elapsed]
openstack_compute_instance_v2.instancia_1: Still creating... [30s elapsed]
openstack_compute_instance_v2.instancia_2: Still creating... [30s elapsed]
openstack_compute_instance_v2.instancia_2: Creation complete after 35s [id=c6614d64-10af-4fe0-8459-740069276bee]
openstack_compute_instance_v2.instancia_1: Creation complete after 35s [id=a1600c6b-2426-4546-9199-d9ccd0f91818]

Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
cloud@main: ~$ terraform apply

```

Figura 8 Print do terminal com terraform apply completo – Giovana.

CheckPoint -Luiza:

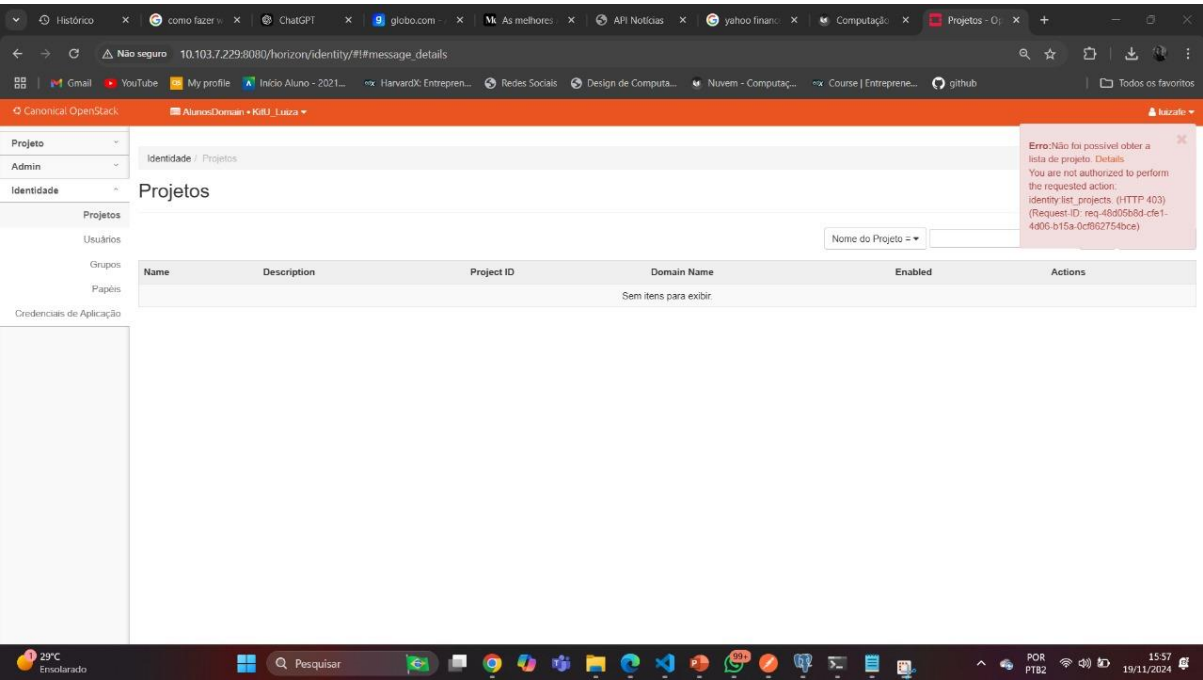


Figura 9 Aba Identity projects no OpenStack – Luiza.

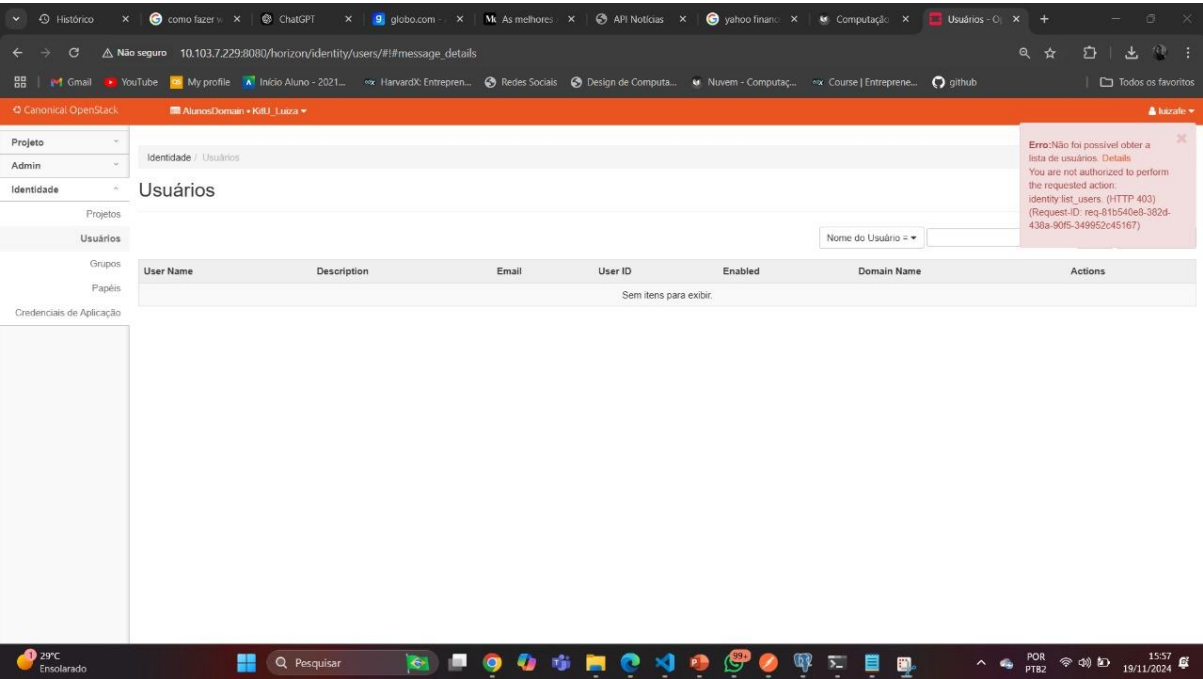


Figura 10 Aba Identity users no OpenStack – Luiza.

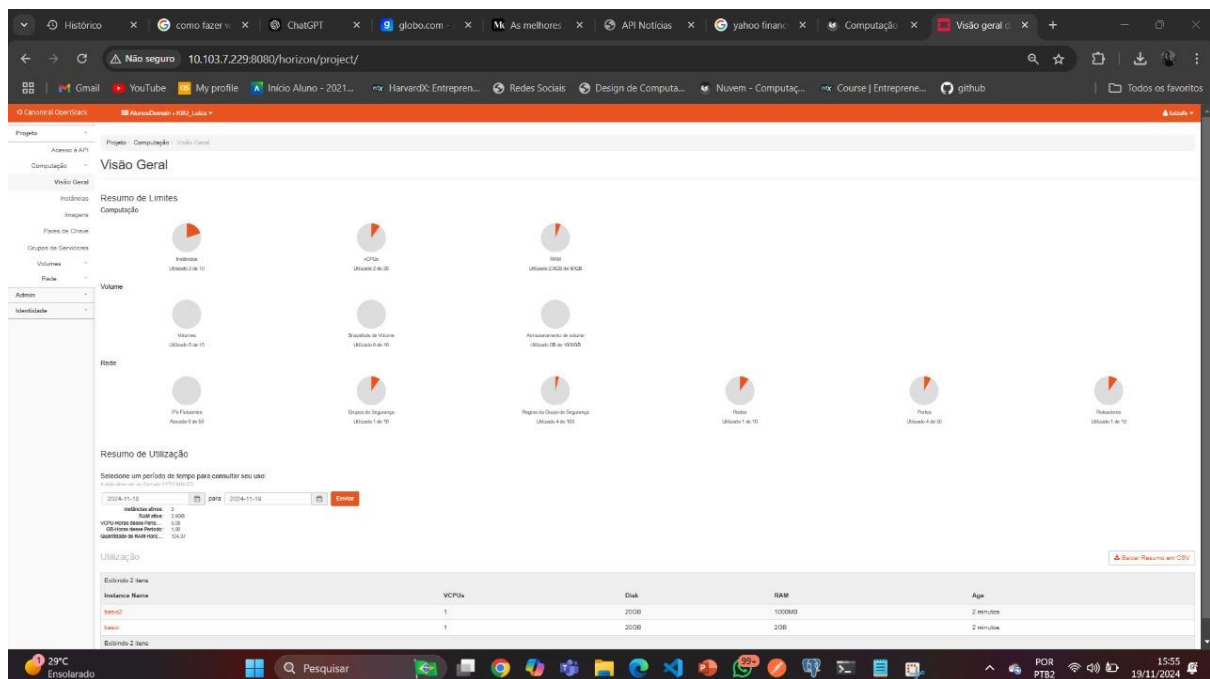


Figura 11 ABA Compute Overview no OpenStack – Luiza.

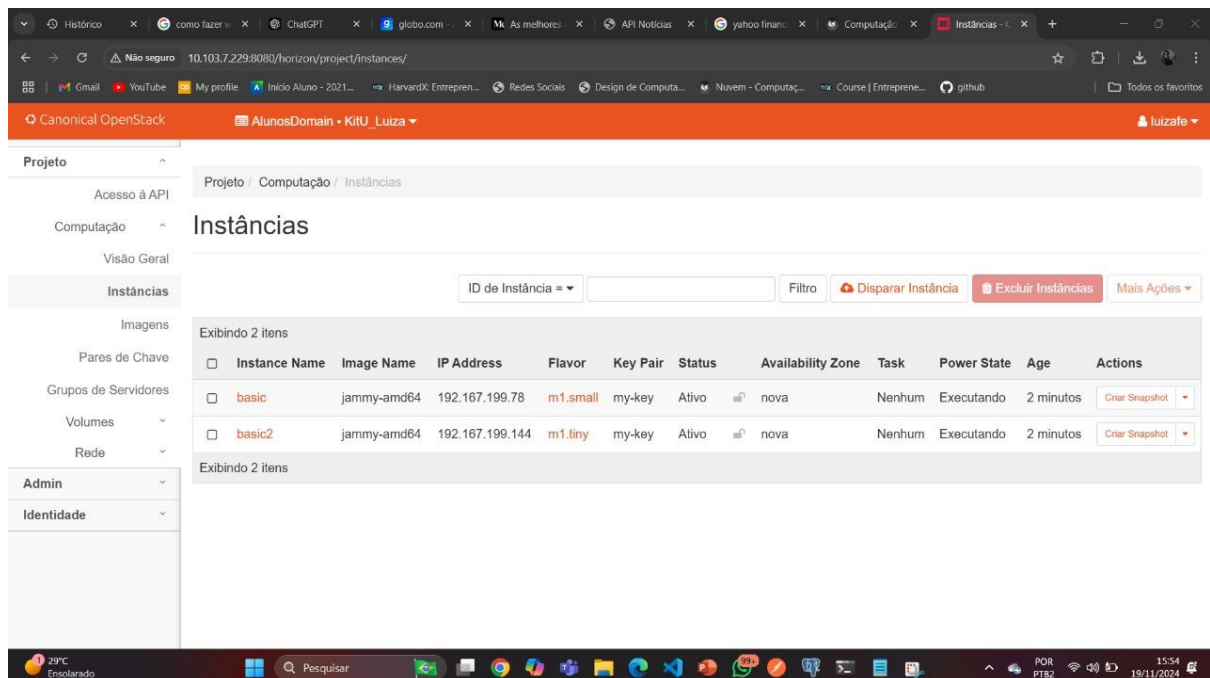


Figura 12 Aba Compute Instances no OpenStack – Luiza.

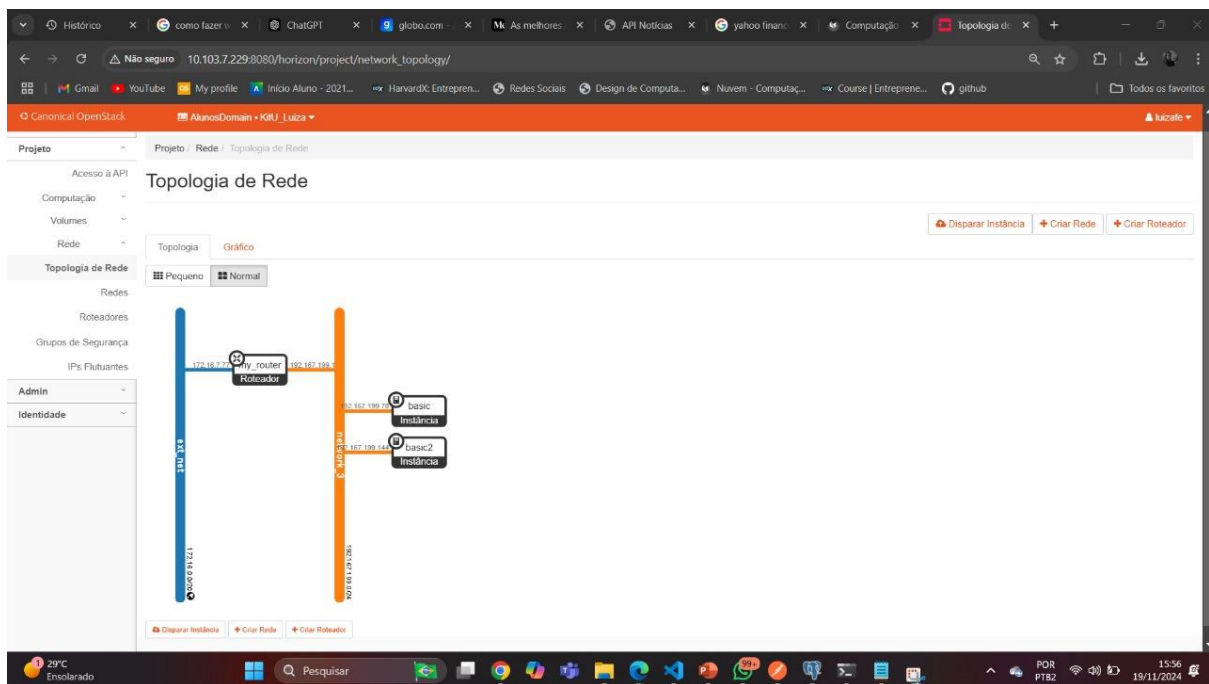


Figura 13 Aba Network Topology no OpenStack – Luiza.

```
cloud@main: ~/KitU_Luiza/te
+ ipv6_ra_mode = (known after apply)
+ network_id = (known after apply)
+ no_gateway = false
+ region = (known after apply)
+ tenant_id = (known after apply)
+ allocation_pool (known after apply)
+ allocation_pools (known after apply)
}
Plan: 6 to add, 0 to change, 0 to destroy.
Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.
Enter a value: yes
openstack_networking_router_v2.router_1: Creating...
openstack_networking_network_v2.network_3: Creation complete after 7s [id=5e109d4c-244f-46b3-bc57-2c40fcabb39]
openstack_networking_subnet_v2.subnet_1: Creating...
openstack_compute_instance_v2.instancia1: Creating...
openstack_networking_router_v2.router_1: Creation complete after 9s [id=8aeb50fe-554d-4c92-9259-a1561fd860d4]
openstack_networking_subnet_v2.subnet_1: Creation complete after 6s [id=01811f93-d3a8-4fb3-bc45-f287f905c8d4]
openstack_networking_router_interface_v2.int_1: Creating...
openstack_compute_instance_v2.instancia2: Still creating... [18s elapsed]
openstack_compute_instance_v2.instancia1: Still creating... [10s elapsed]
openstack_networking_router_interface_v2.int_1: Creation complete after 9s [id=4ee3e98f-77e5-428d-a968-aa76b486e24e]
openstack_compute_instance_v2.instancia1: Still creating... [20s elapsed]
openstack_compute_instance_v2.instancia2: Still creating... [20s elapsed]
openstack_compute_instance_v2.instancia1: Still creating... [30s elapsed]
openstack_compute_instance_v2.instancia2: Still creating... [30s elapsed]
openstack_compute_instance_v2.instancia1: Still creating... [40s elapsed]
openstack_compute_instance_v2.instancia2: Still creating... [40s elapsed]
openstack_compute_instance_v2.instancia1: Still creating... [50s elapsed]
openstack_compute_instance_v2.instancia2: Still creating... [50s elapsed]
openstack_compute_instance_v2.instancia1: Still creating... [1m0s elapsed]
openstack_compute_instance_v2.instancia2: Still creating... [1m0s elapsed]
openstack_compute_instance_v2.instancia1: Still creating... [1m10s elapsed]
openstack_compute_instance_v2.instancia2: Still creating... [1m10s elapsed]
openstack_compute_instance_v2.instancia1: Creation complete after 1m15s [id=aa608fa6-bd80-4da5-869e-250-9611d4ac]
openstack_compute_instance_v2.instancia2: Creation complete after 1m15s [id=0ee2bbf5-4363-4152-a8ef-8d918f1f9142]
Apply complete! Resources: 6 added, 0 changed, 0 destroyed.
cloud@main:~/KitU_Luiza/terraform$
```

Figura 14 Print do terminal com terraform apply completo – Luiza.

CheckPoint -Lucas:

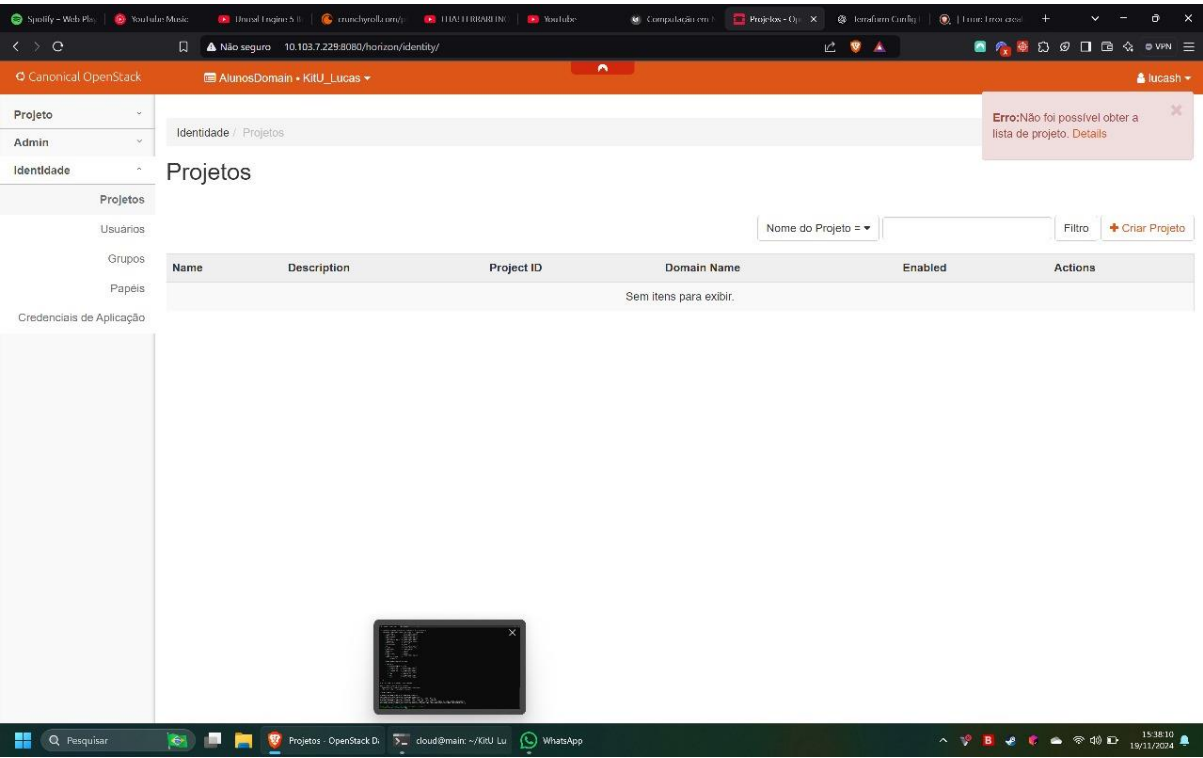


Figura 15 Aba Identity projects no OpenStack – Lucas.

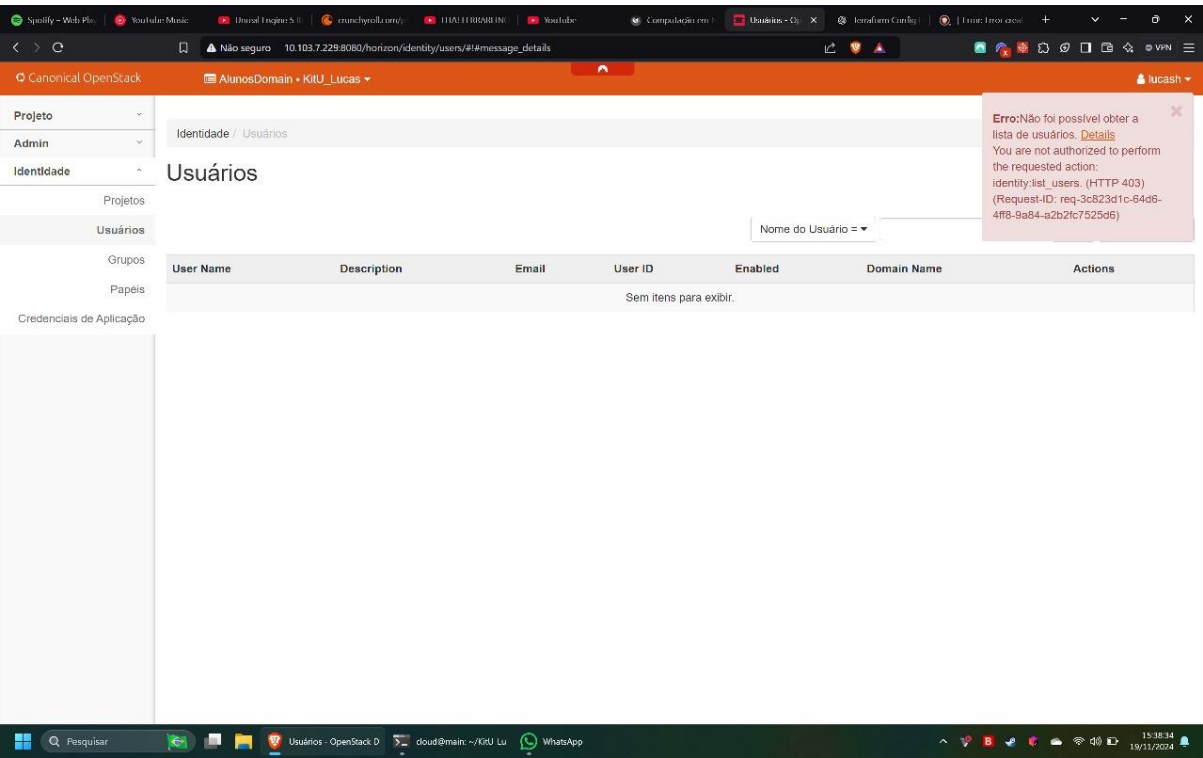


Figura 16 Aba Identity users no OpenStack – Lucas.



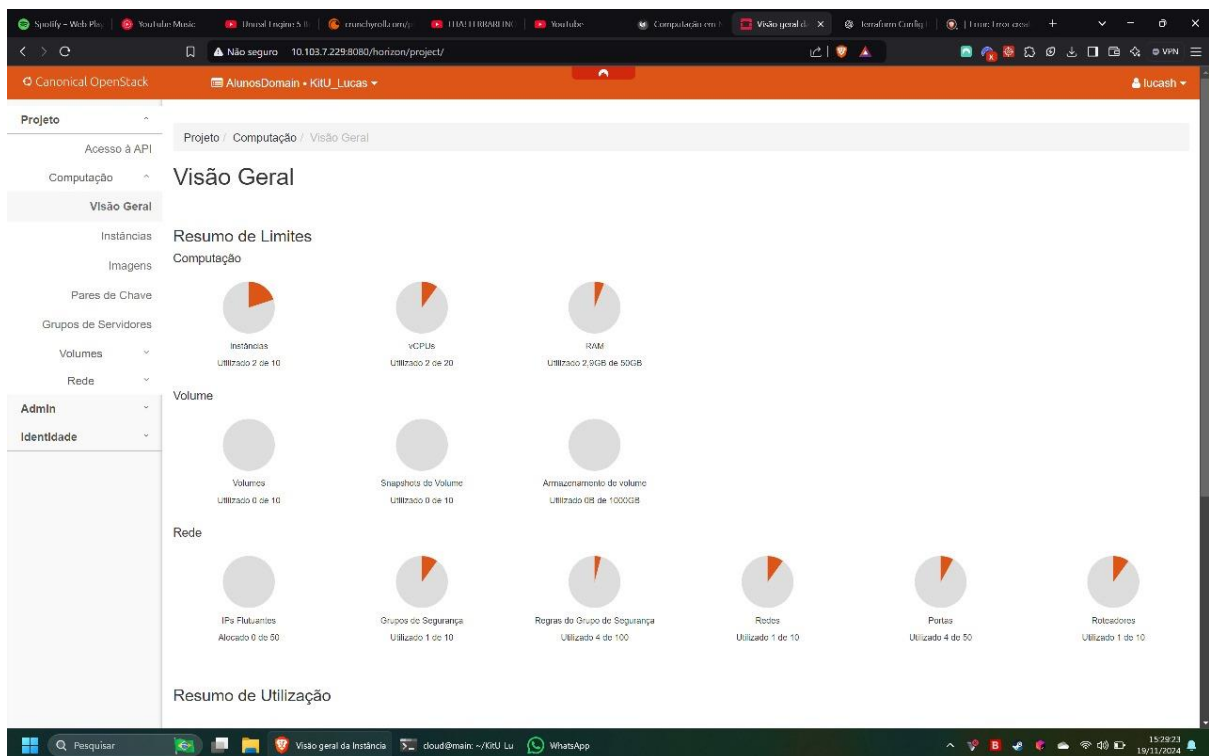


Figura 17 Aba Compute Overview no OpenStack – Lucas.

**Instâncias**

ID de Instância =  Filtro Disparar Instância Excluir Instâncias Mais Ações

Exibindo 2 itens

<input type="checkbox"/>	Instance Name	Image Name	IP Address	Flavor	Key Pair	Status	Availability Zone	Task	Power State	Age	Actions
<input type="checkbox"/>	basic2	jammy-amd64	192.167.199.142	m1.tiny	my-key	Ativo	nova	Nenhum	Executando	14 minutos	<a href="#">Criar Snapshot</a>
<input type="checkbox"/>	basic	jammy-amd64	192.167.199.205	m1.small	my-key	Ativo	nova	Nenhum	Executando	14 minutos	<a href="#">Criar Snapshot</a>

Exibindo 2 itens

Figura 18 Aba Compute Instances no OpenStack – Lucas.

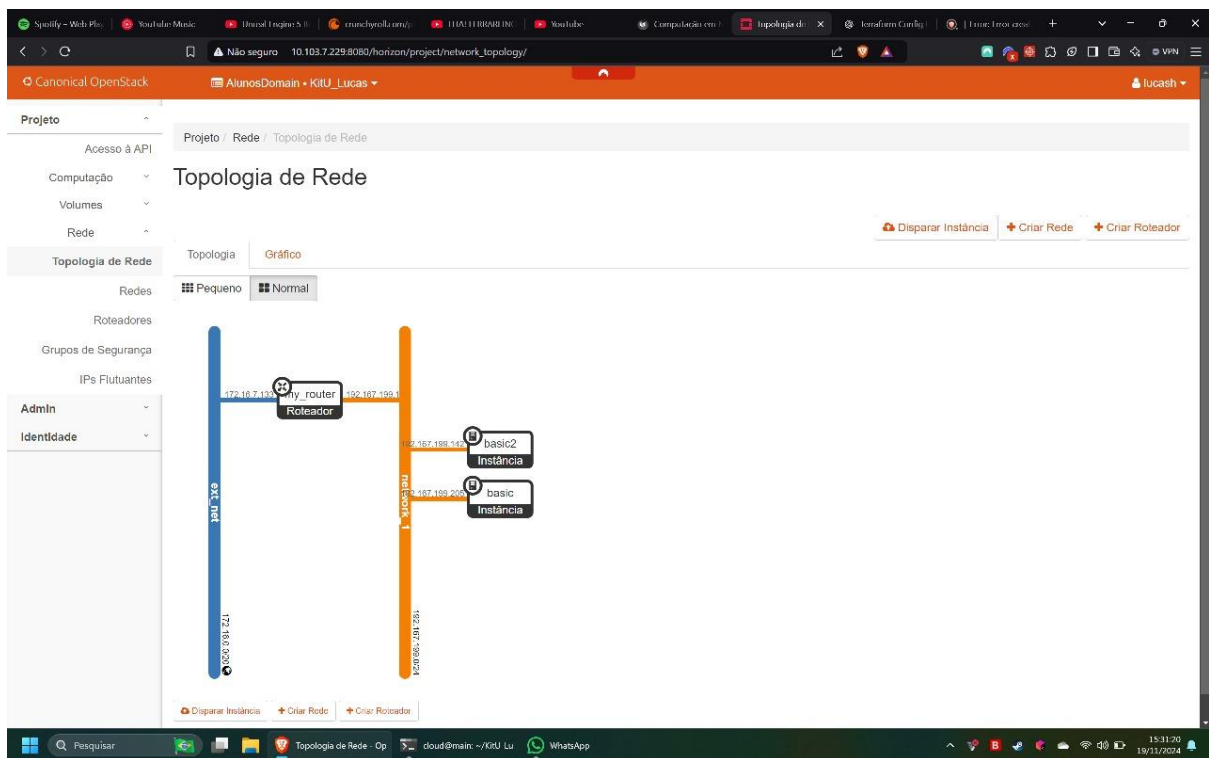


Figura 19 Aba Network Topology no OpenStack – Lucas.

```
# openstack_compute_instance_v2.instancia2 will be created
+ resource "openstack_compute_instance_v2" "instancia2" {
  + access_ip_v4      = (known after apply)
  + access_ip_v6      = (known after apply)
  + all_metadata      = (known after apply)
  + all_tags          = (known after apply)
  + availability_zone  = (known after apply)
  + flavor_id         = (known after apply)
  + flavor_name       = "m1.tiny"
  + force_delete      = false
  + id                = (known after apply)
  + image_id          = (known after apply)
  + image_name        = "jammy-amd64"
  + key_pair          = "my-key"
  + name              = "basic2"
  + power_state       = "active"
  + region            = (known after apply)
  + security_groups   = [
    + "default",
  ]
  + stop_before_destroy = false

  + network {
    + access_network = false
    + fixed_ip_v4    = (known after apply)
    + fixed_ip_v6    = (known after apply)
    + floating_ip    = (known after apply)
    + mac            = (known after apply)
    + name           = "network_1"
    + port           = (known after apply)
    + uuid           = (known after apply)
  }
}

Plan: 2 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

Enter a value: yes

openstack_compute_instance_v2.instancia2: Creating...
openstack_compute_instance_v2.instancia2: Creating...
openstack_compute_instance_v2.instancia2: Still creating... [10s elapsed]
openstack_compute_instance_v2.instancia2: Still creating... [10s elapsed]
openstack_compute_instance_v2.instancia2: Creation complete after 14s [id=9789203b-1cc6-4bcb-b187-263484291979]
openstack_compute_instance_v2.instancia2: Creation complete after 17s [id=625a0ece-e3a7-498c-a0ac-529174eebbda]

Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
cloud@main:~/KITU_Lucas/terraform$
```

Figura 20 Print do terminal com terraform apply completo – Lucas.

## QUESTÕES

**Você é o CTO (Chief Technology Officer) de uma grande empresa com sede em várias capitais no Brasil e precisa implantar um sistema crítico, de baixo custo e com dados sigilosos para a área operacional.**

**a) Você escolheria Public Cloud ou Private Cloud?**

Para as tarefas de processamento, seria benéfico escolher uma Public Cloud, devido à alta disponibilidade e escalabilidade. E para as tarefas que requerem maior segurança seria melhor uma Private Cloud, proporcionando um maior controle da segurança de dados sigilosos e uma baixa latência para trabalhos. Logo, uma boa escolha seria fazer uma Nuvem Híbrida, possuindo boa segurança e flexibilidade, mas vale-se mencionar que é complexo integrar e gerenciar os ambientes das duas nuvens eficientemente e que teria que os funcionários devem possuir a habilidade de lidar com os dois ambientes.

**b) Agora explique para o RH por que você precisa de um time de DevOps.**

Um time de DevOps é necessário, uma vez que, além de fornecer uma grande escalabilidade e eficiência, ele seria responsável por atualizações e melhorias periódicas, pela automação de processos e pelo monitoramento, rapidamente identificando problemas e implementando soluções.

**c) Considerando o mesmo sistema crítico, agora sua equipe deverá planejar e implementar um ambiente resiliente e capaz de mitigar possíveis interrupções/indisponibilidades. Para isso, identifiquem quais são as principais ameaças que podem colocar sua infraestrutura em risco, e descreva as principais ações que possibilitem o restabelecimento de todas as aplicações de forma rápida e organizada caso algum evento cause uma interrupção ou incidente de segurança. Para isso monte um plano de DR e HA que considere entre as ações:**

- Mapeamento das principais ameaças que podem colocar em riscos o seu ambiente.
- Elenque e priorize as ações para a recuperação de seu ambiente em uma possível interrupção/desastre.
- Como sua equipe irá tratar a política de backup?

- **Considerando possíveis instabilidades e problemas, descreva como alta disponibilidade será implementada em sua infraestrutura.**

Ameaças:

- Ataques hackers, falhas de hardware, erro humano e instabilidade de rede.

Recuperação de ambiente:

- Backup automatizado e servidores redundantes.

Política de backup:

- Frequente, criptografia e armazenar em mais de um servidor.

Alta disponibilidade:

- Load balancer e estratégia de multi-cloud.