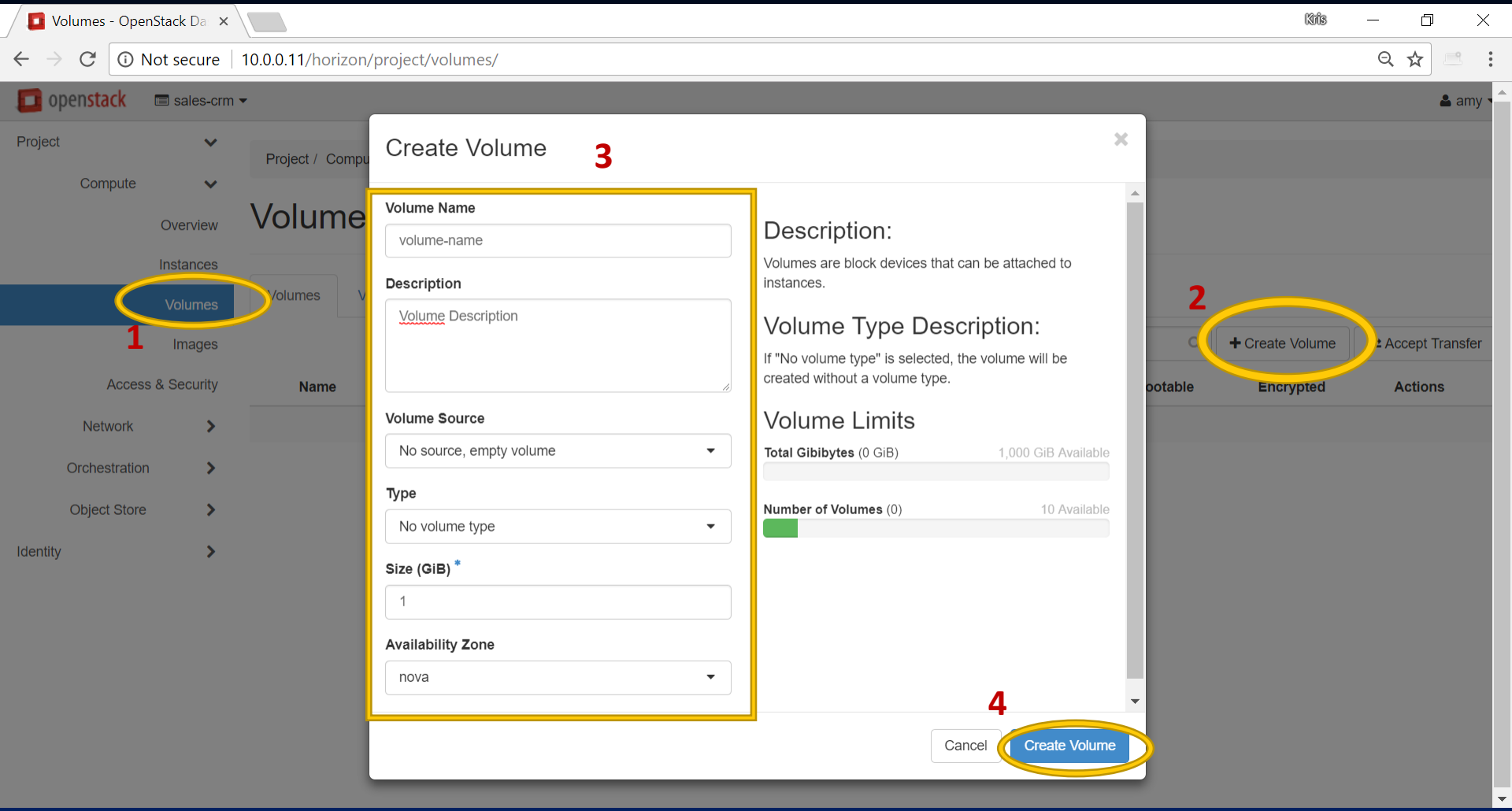
Open Cloud Consulting

Preparing to **Certified OpenStack Administrator** Exam

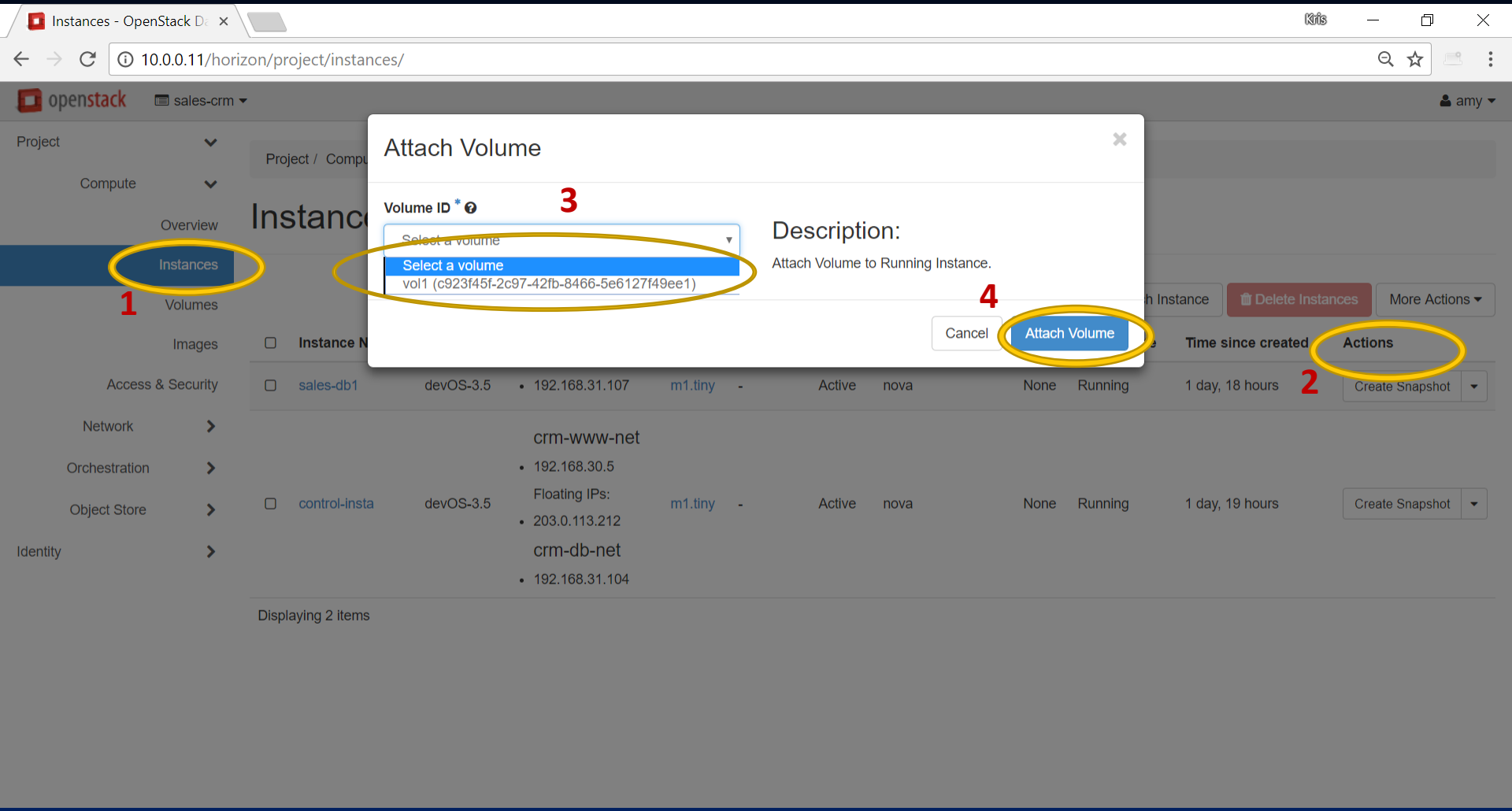
Section 7 – Cinder Block Storage

Lecture 30. Cinder Summary and Review

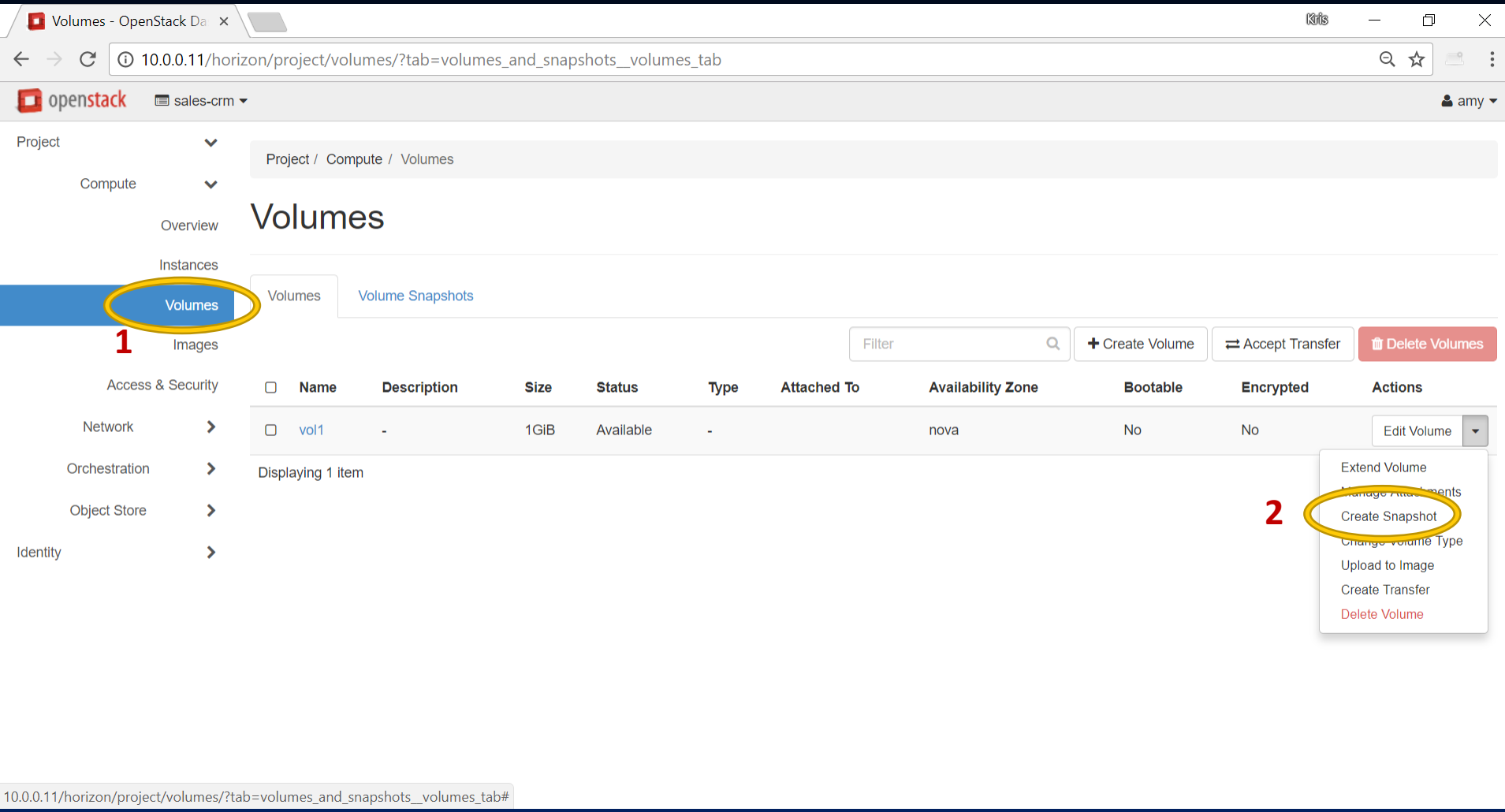
Create a Volume



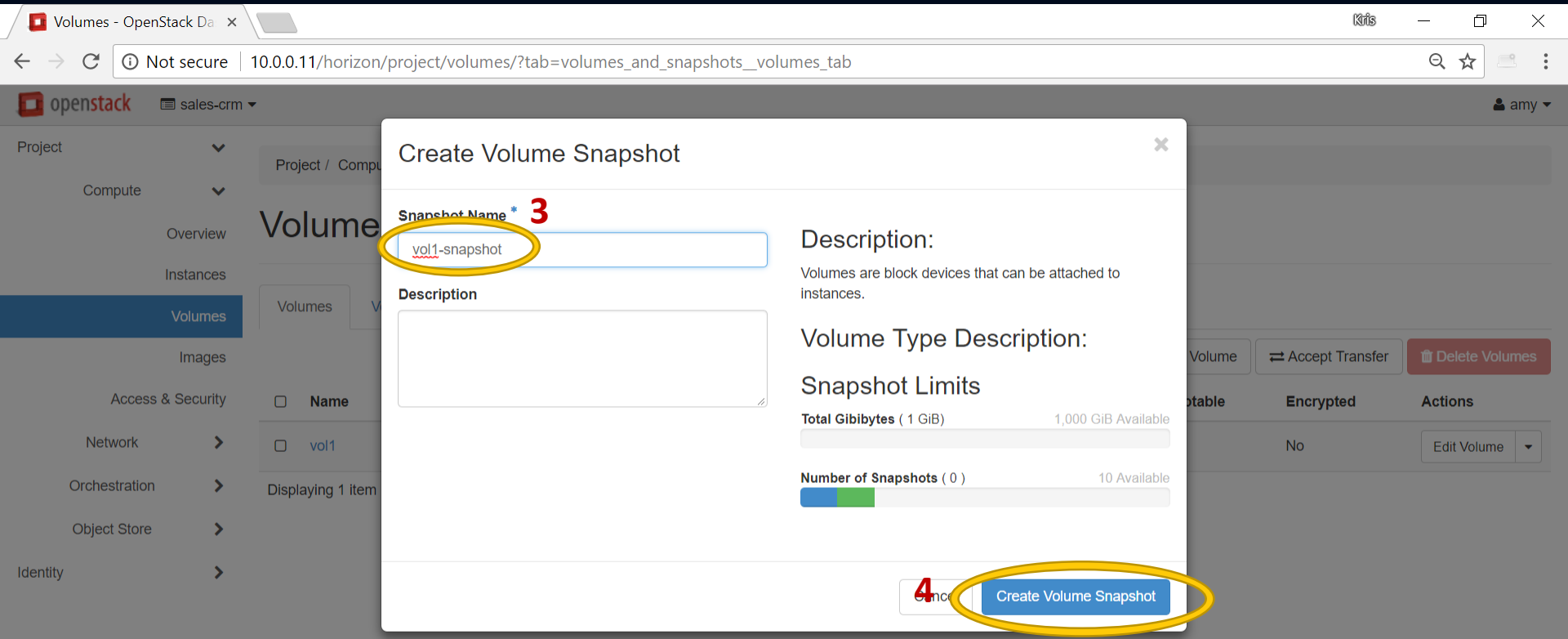
Attach a Volume to an Instance



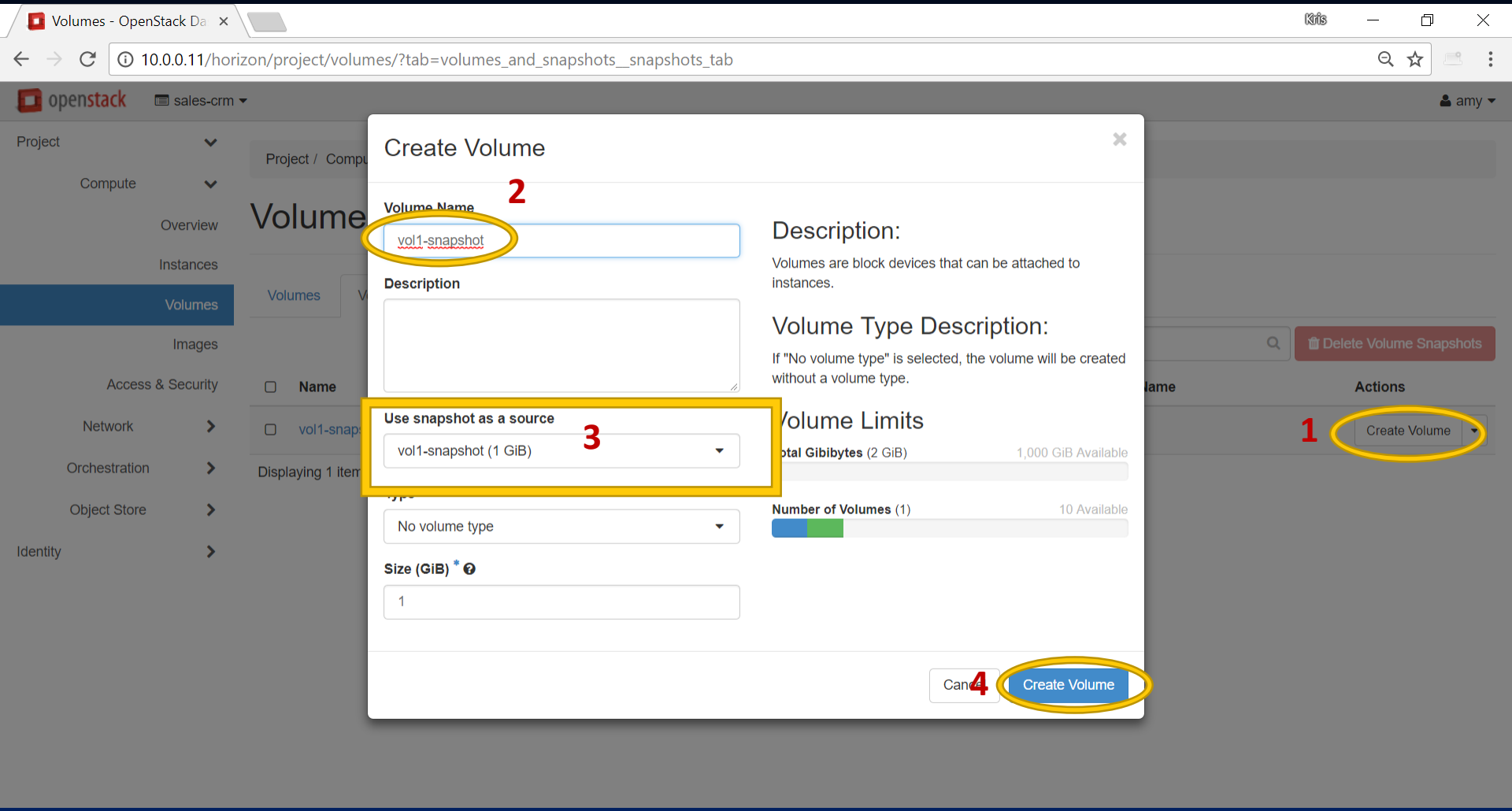
Create Volume Snapshot



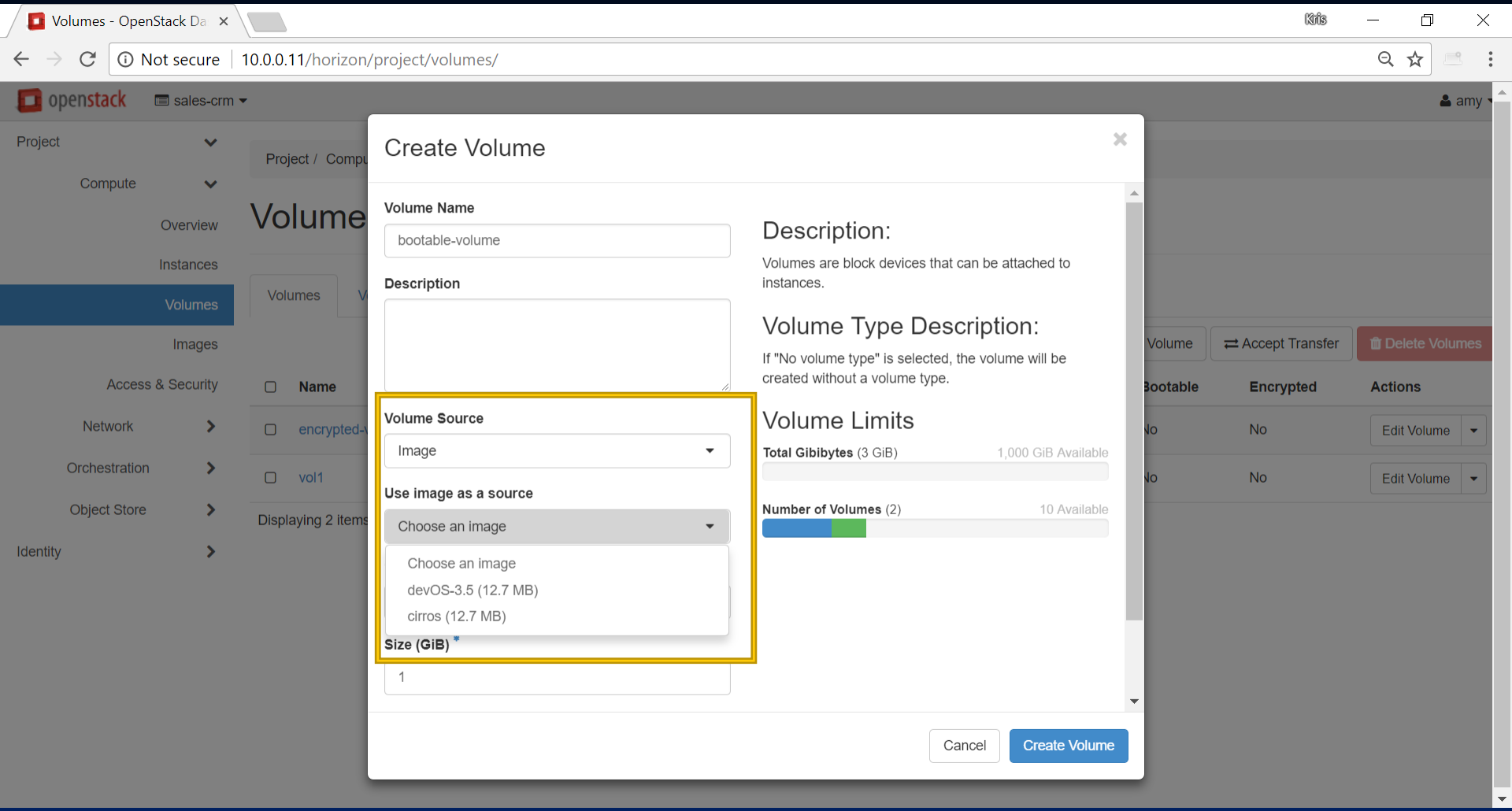
Create Volume Snapshot



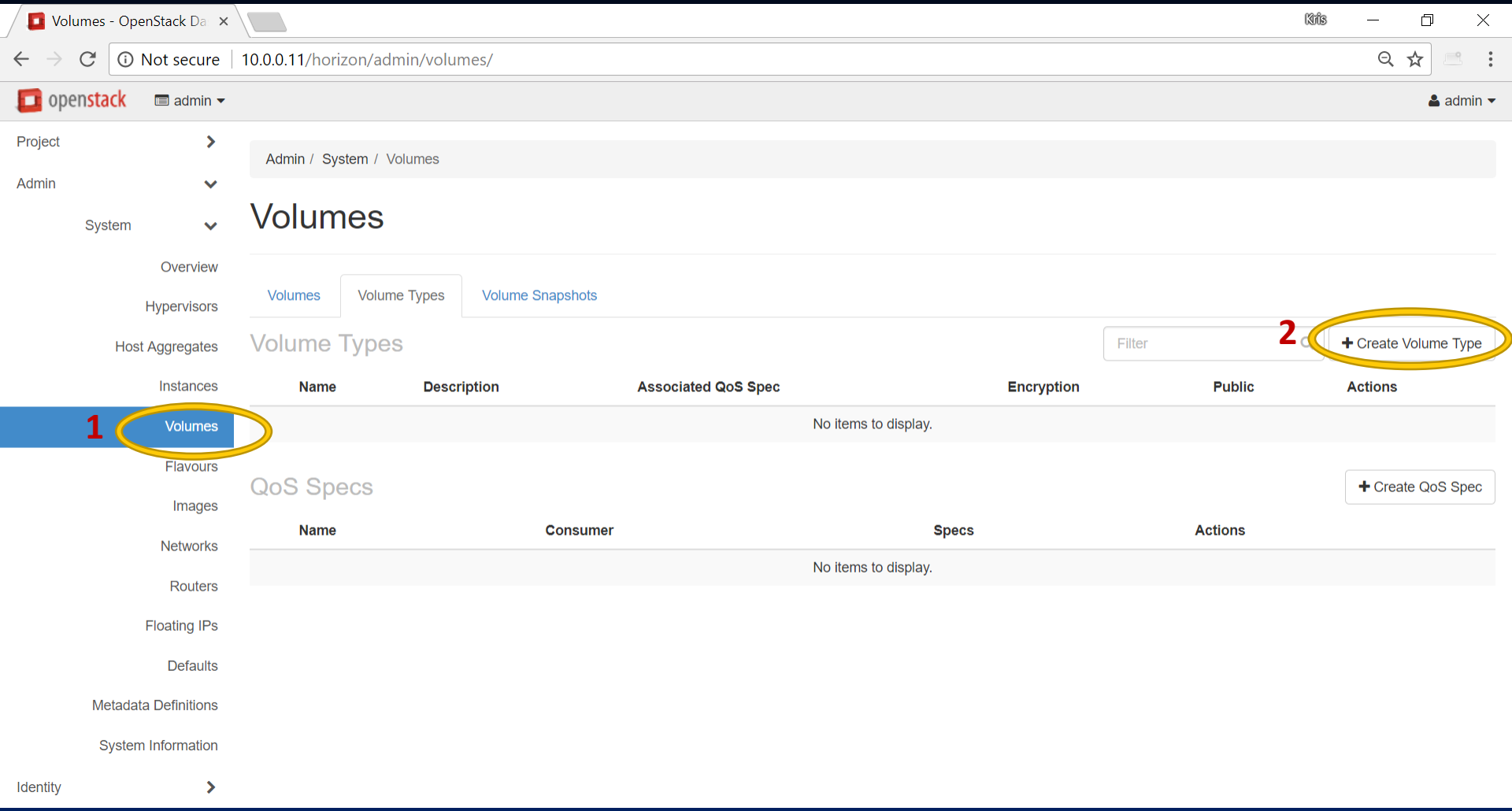
Create New Volume from Snapshot



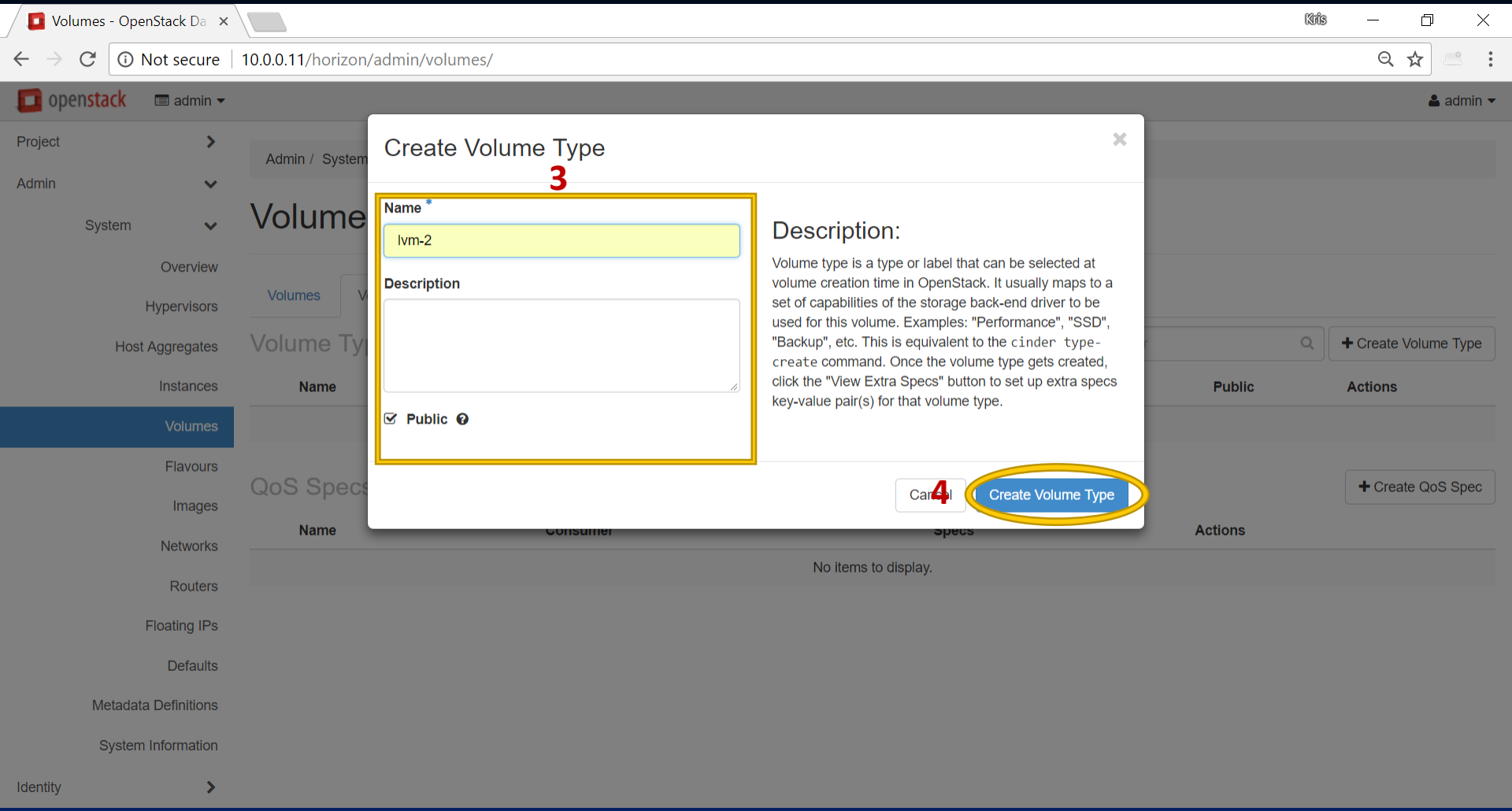
Create Volume from Image



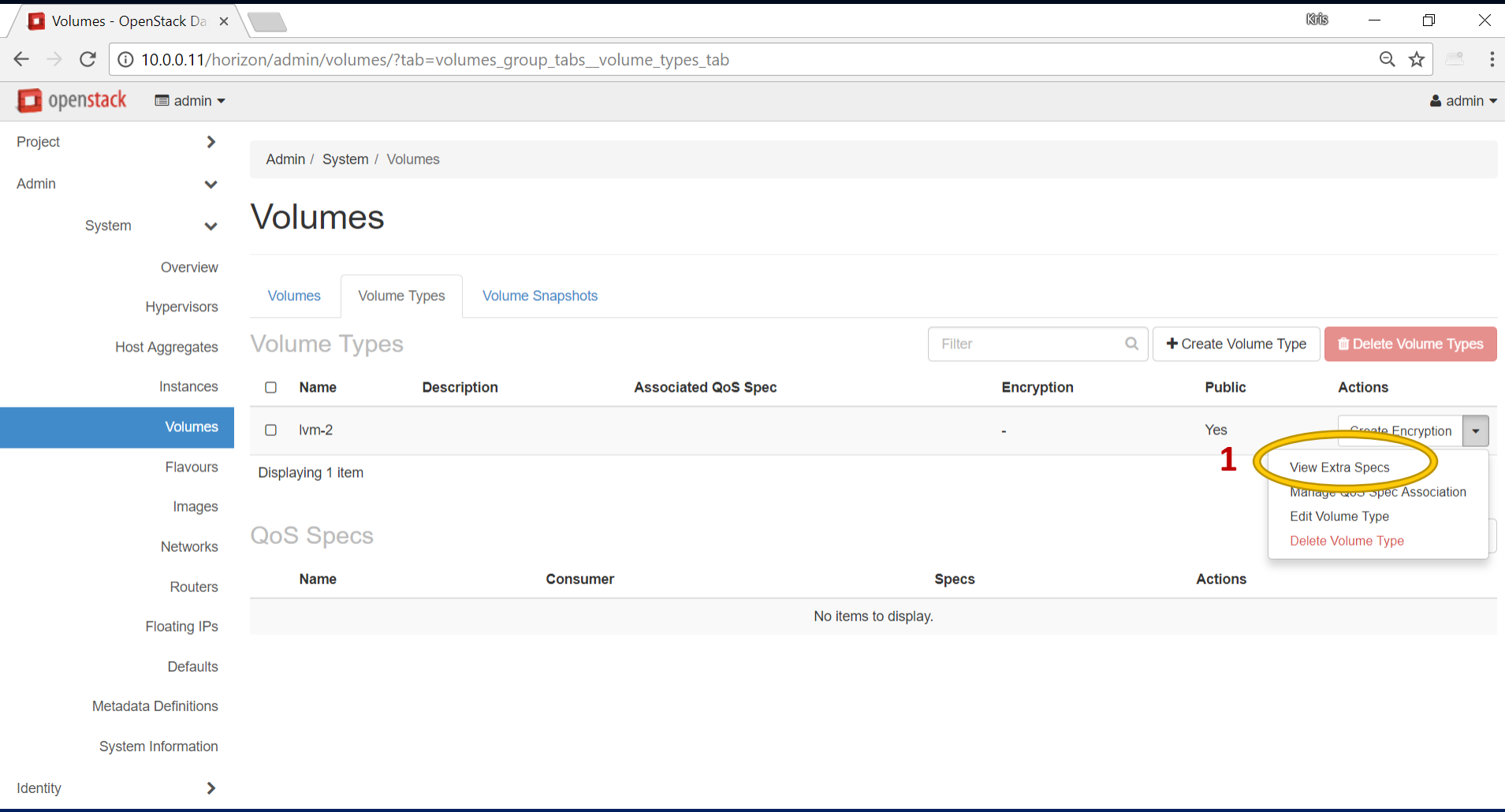
Create Volume Type



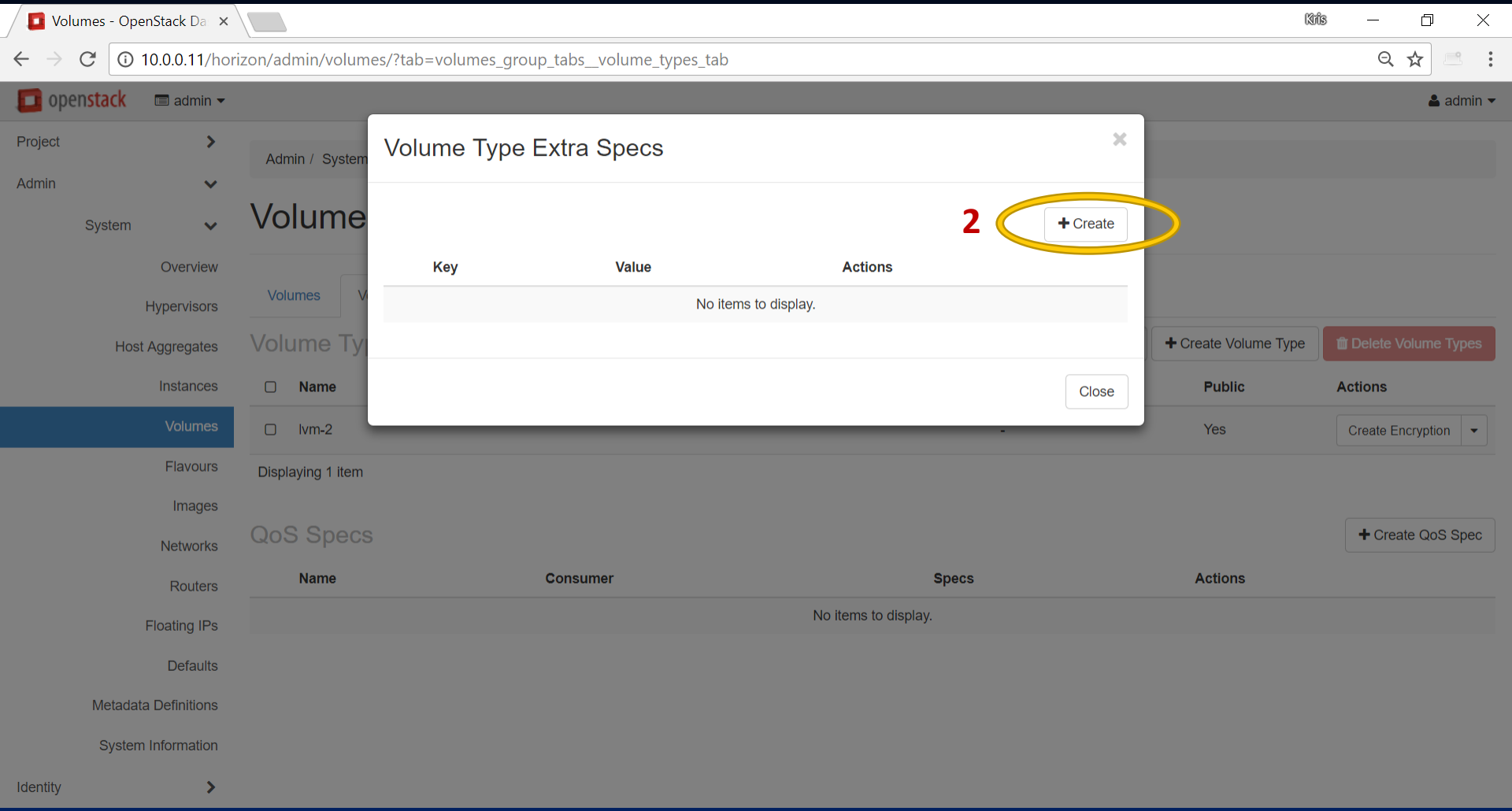
Create Volume Type



Enable Multiple Backends



Enable Multiple Backends



Enable Multiple Backends

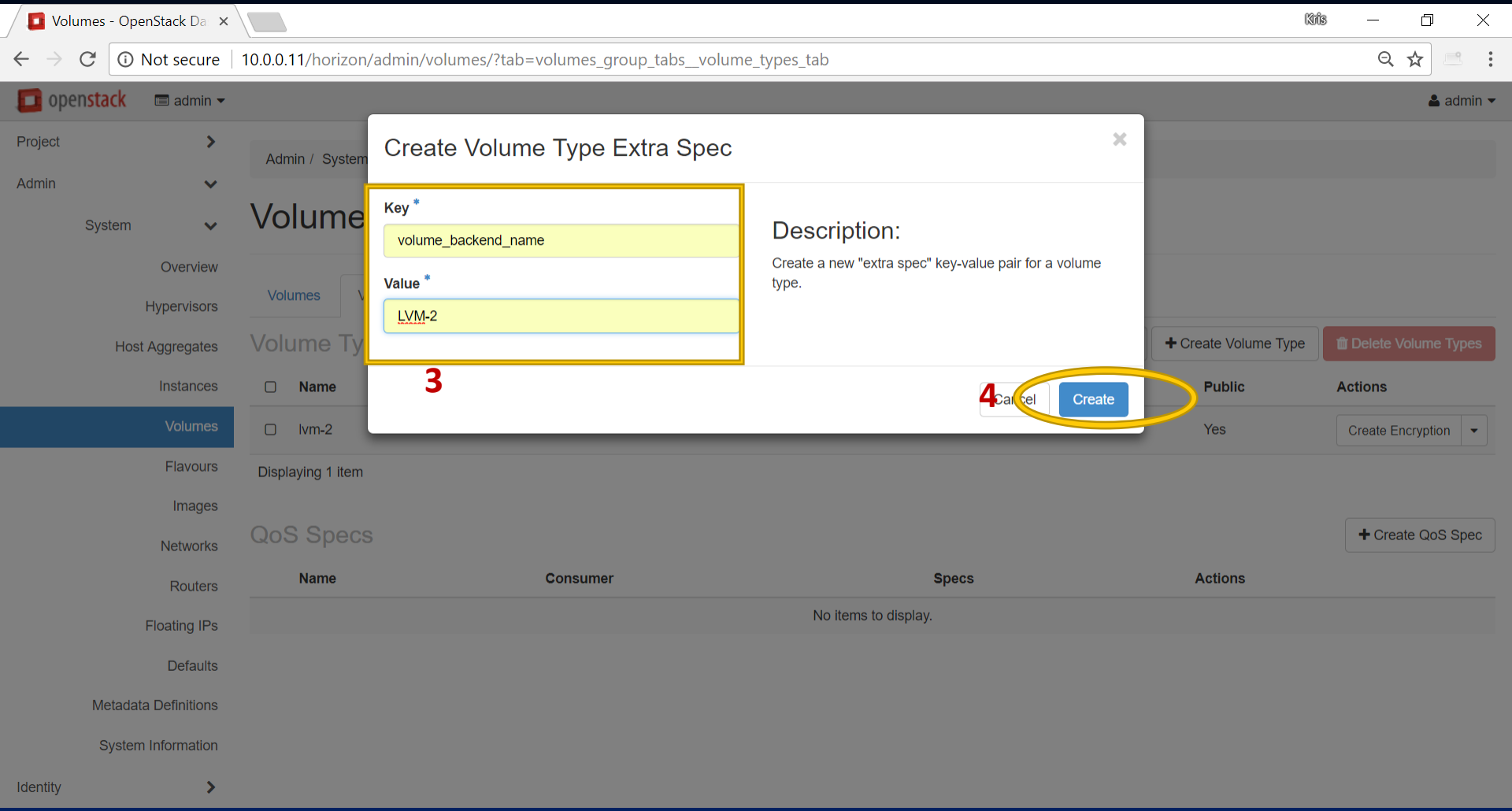
root@coa-lab: /var/log/cinder

```
[DEFAULT]
rootwrap_config = /etc/cinder/rootwra
api_paste_confg = /etc/cinder/api-pas
iscsi_helper = tgtadm
volume_name_template = volume-%s
volume_group = cinder-volumes
verbose = True
auth_strategy = keystone
state_path = /var/lib/cinder
lock_path = /var/lock/cinder
volumes_dir = /var/lib/cinder/volumes
transport_url = rabbit://openstack:op
my_ip = 10.0.0.11
glance_host = 10.0.0.11
control_exchange = cinder
notification_driver = cinder.openstac
glance_api_servers = http://controlle
enabled_backends = lvm, lvm-2
backup_driver = cinder.backup.drivers
backup_metadata_version = 2
backup_compression_algorithm = zlib
backup_swift_auth = per_user
backup_swift_container = volumebackup
backup_swift_retry_attempts = 3
backup_swift_retry_backoff = 2
[database]
connection = mysql+pymysql://cinder:o
[keystone_authtoken]
auth_uri = http://controller:5000
auth_url = http://controller:35357
memcached_servers = controller:11211
auth_type = password
project_domain_name = Default
user_domain_name = Default
"/etc/cinder/cinder.conf" 54L, 1678C
```

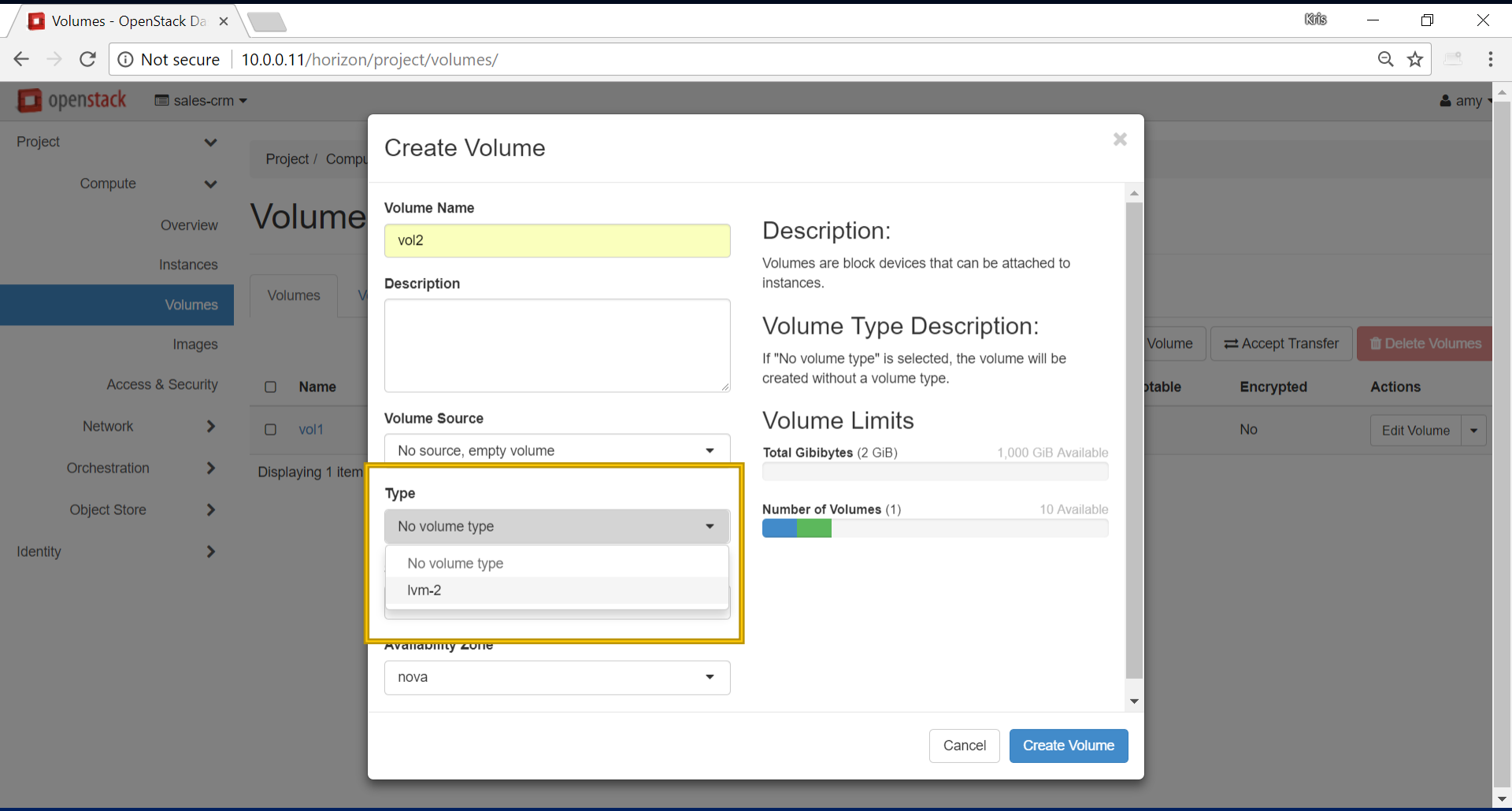
root@coa-lab: /var/log/cinder

```
backup_compression_algorithm = zlib
backup_swift_auth = per_user
backup_swift_container = volumebackups
backup_swift_retry_attempts = 3
backup_swift_retry_backoff = 2
[database]
connection = mysql+pymysql://cinder:openstack@controller/cinder
[keystone_authtoken]
auth_uri = http://controller:5000
auth_url = http://controller:35357
memcached_servers = controller:11211
auth_type = password
project_domain_name = Default
user_domain_name = Default
project_name = service
username = cinder
password = openstack
[oslo_concurrency]
lock_path = /var/lib/cinder/tmp
[keymgr]
fixed_key = 996365354823282660926315781461534351762278641978418176 65
encryption_auth_url = http://10.0.0.11:5000/v3
[lvm]
volume_driver = cinder.volume.drivers.lvm.LVMVolumeDriver
volume_group = cinder-volumes
volume_backend_name = LVM
iscsi_protocol = iscsi
iscsi_helper = tgtadm
[lvm-2]
volume_driver = cinder.volume.drivers.lvm.LVMVolumeDriver
volume_group = cinder-volumes-2
volume_backend_name = LVM-2
iscsi_protocol = iscsi
iscsi_helper = tgtadm
```

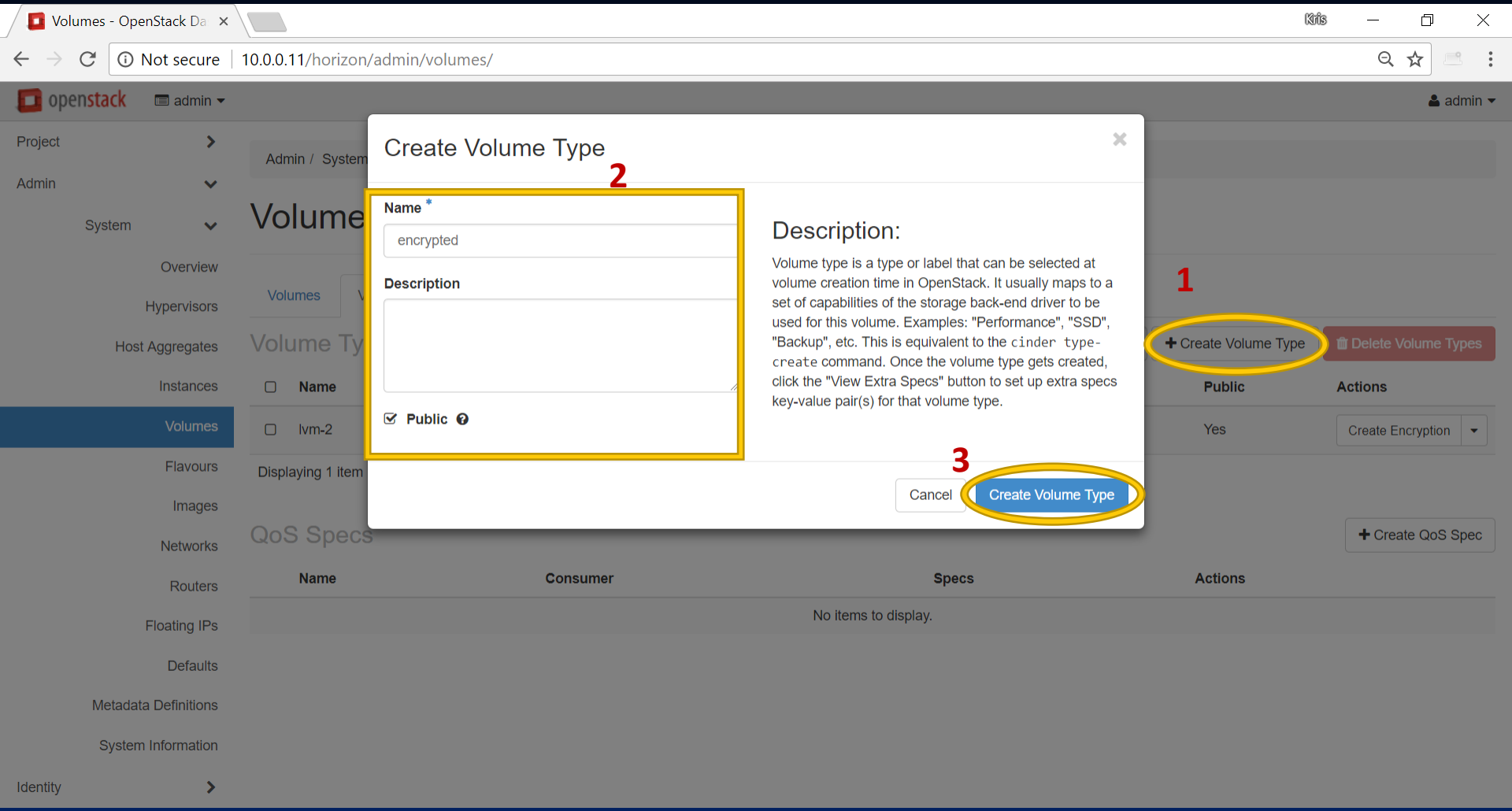
Enable Multiple Backends



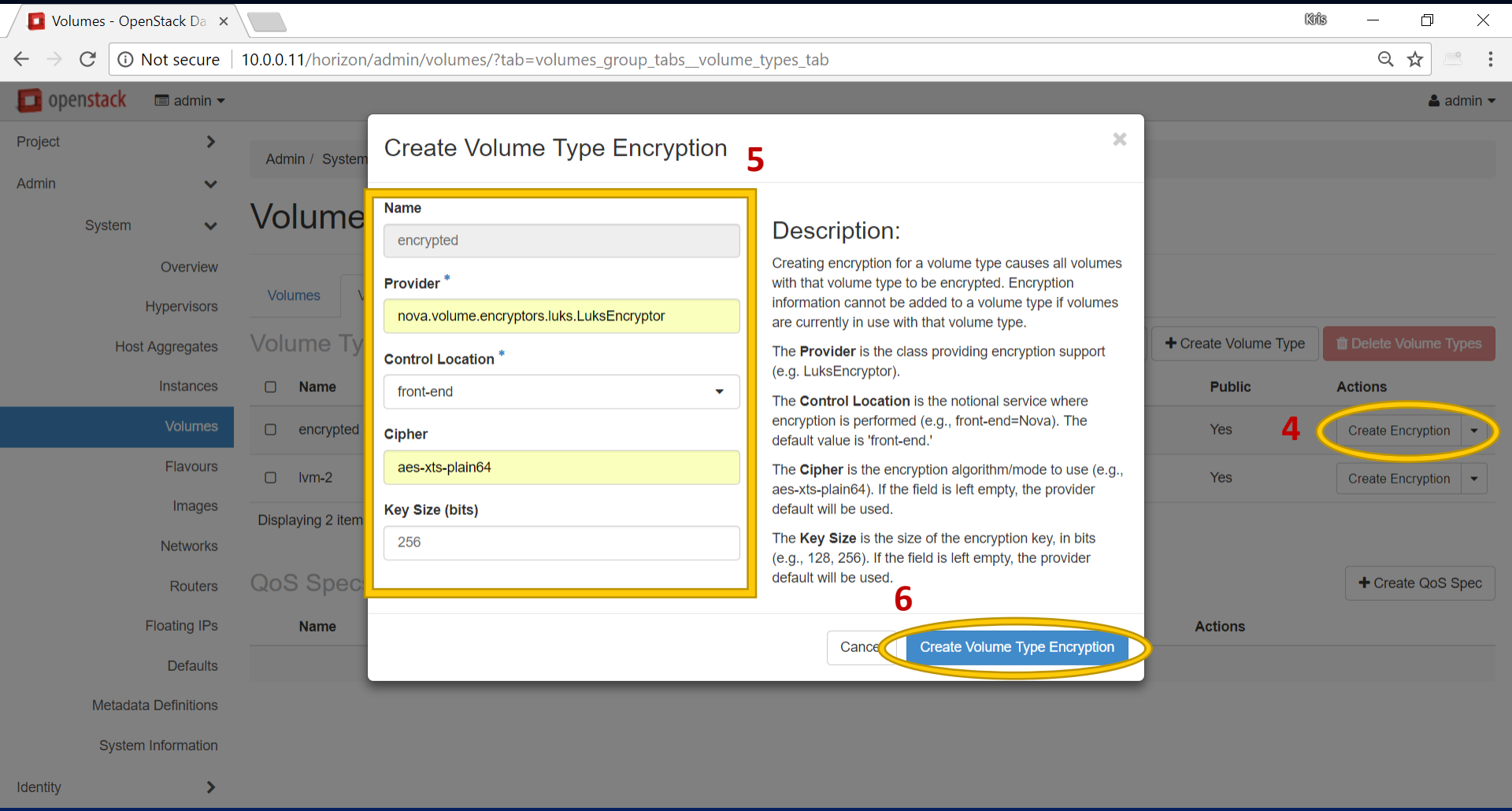
Enable Multiple Backends



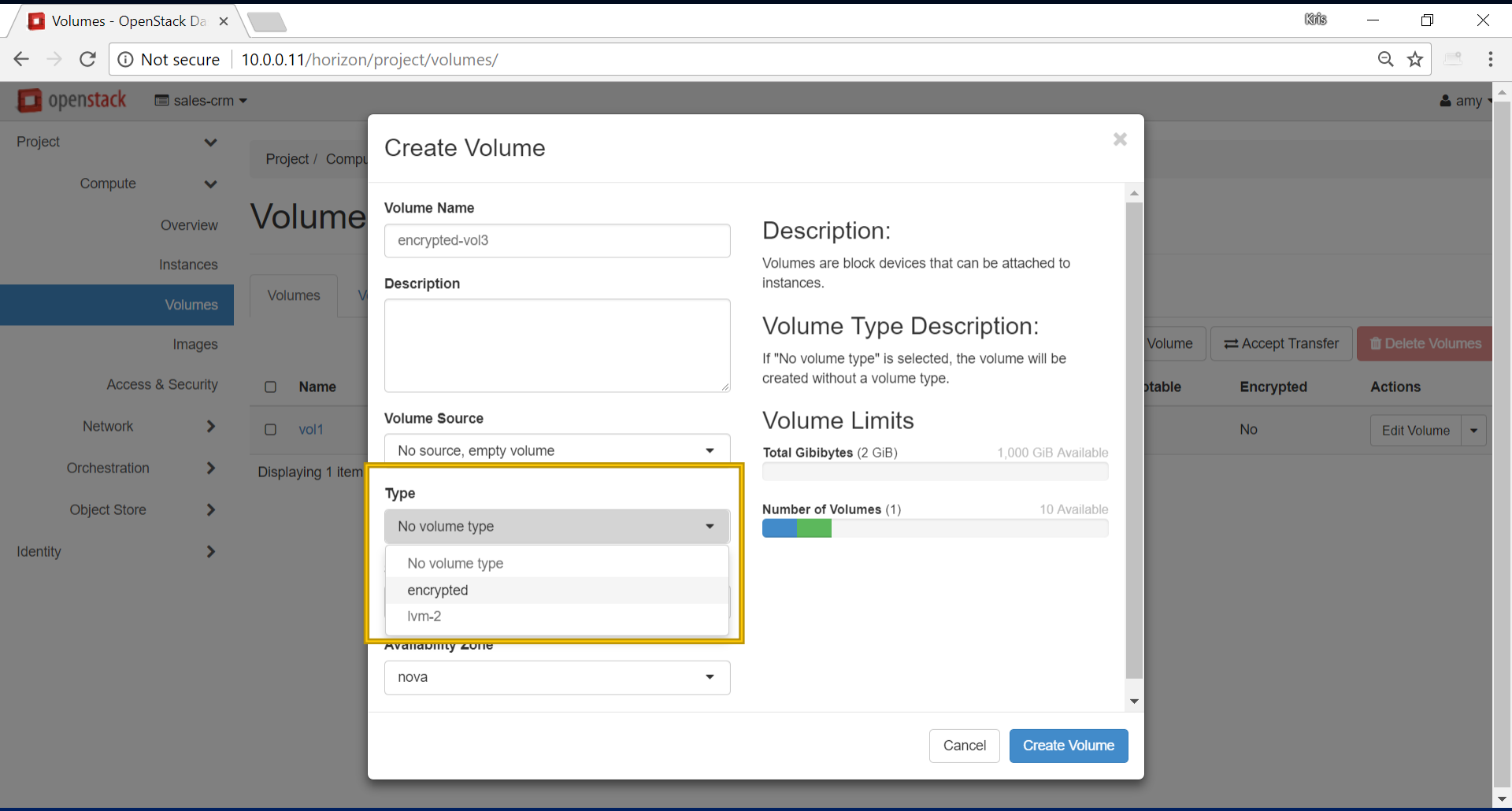
Create Volume Encryption



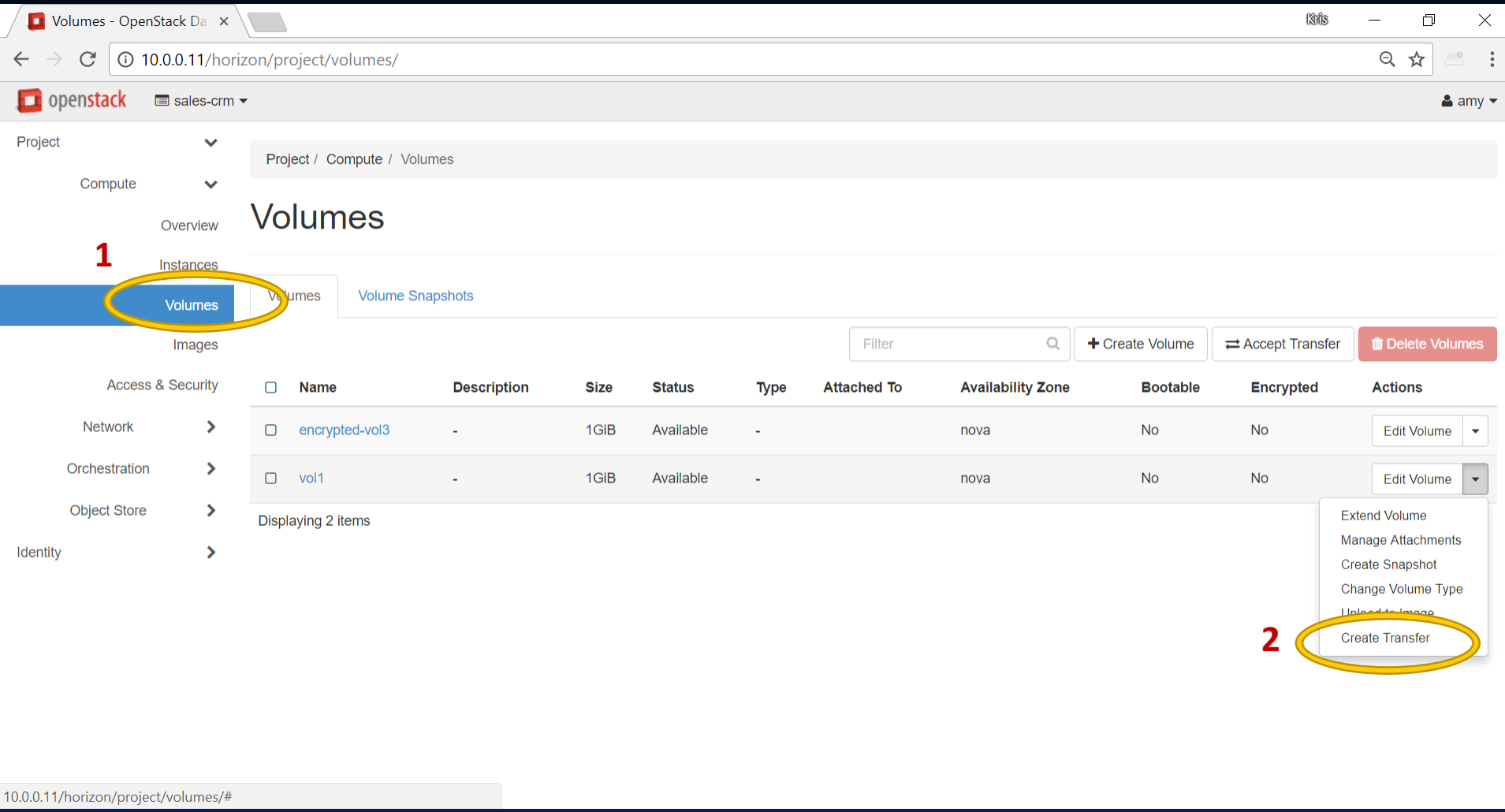
Create Volume Encryption



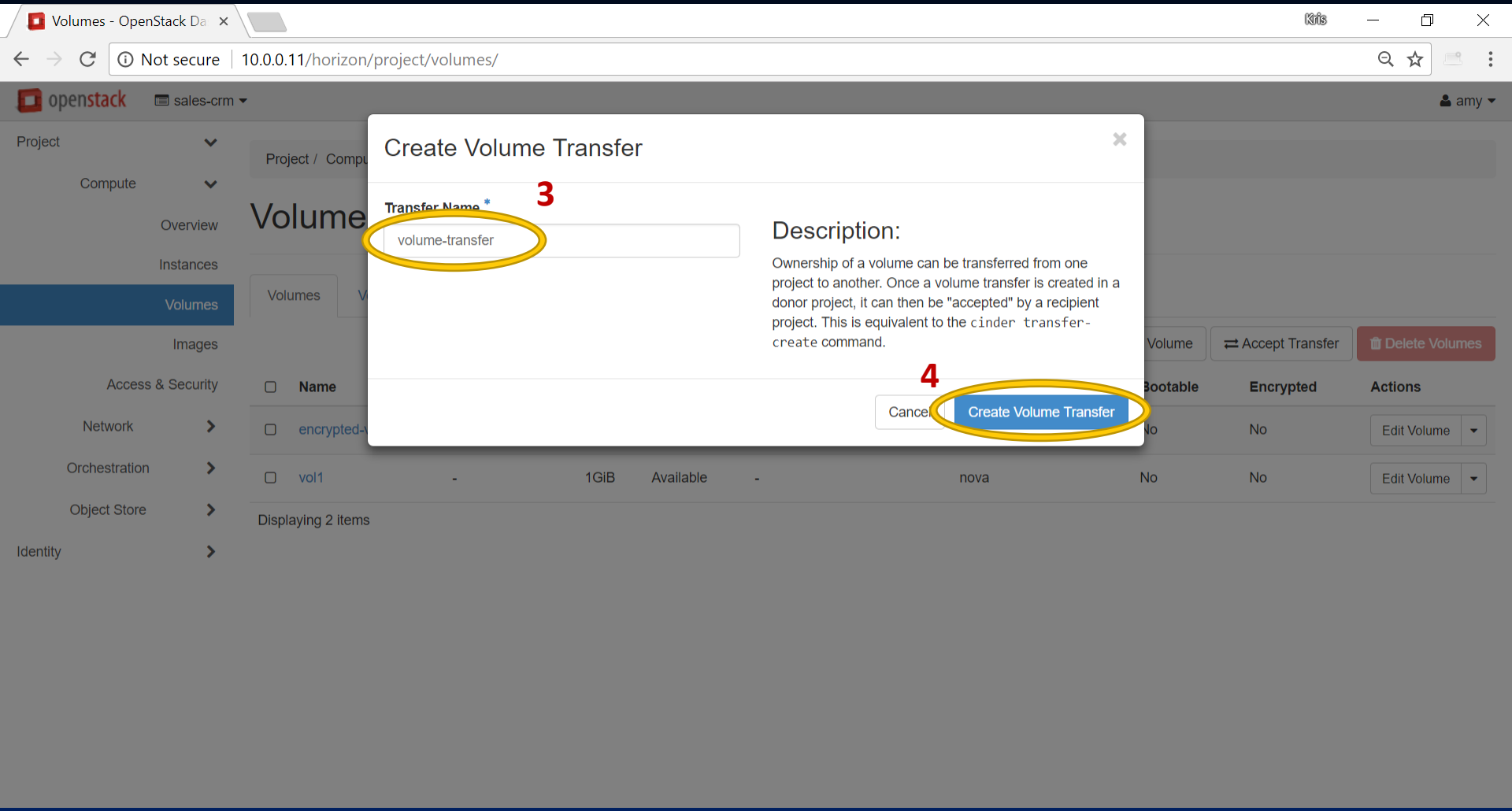
Create Volume Encryption



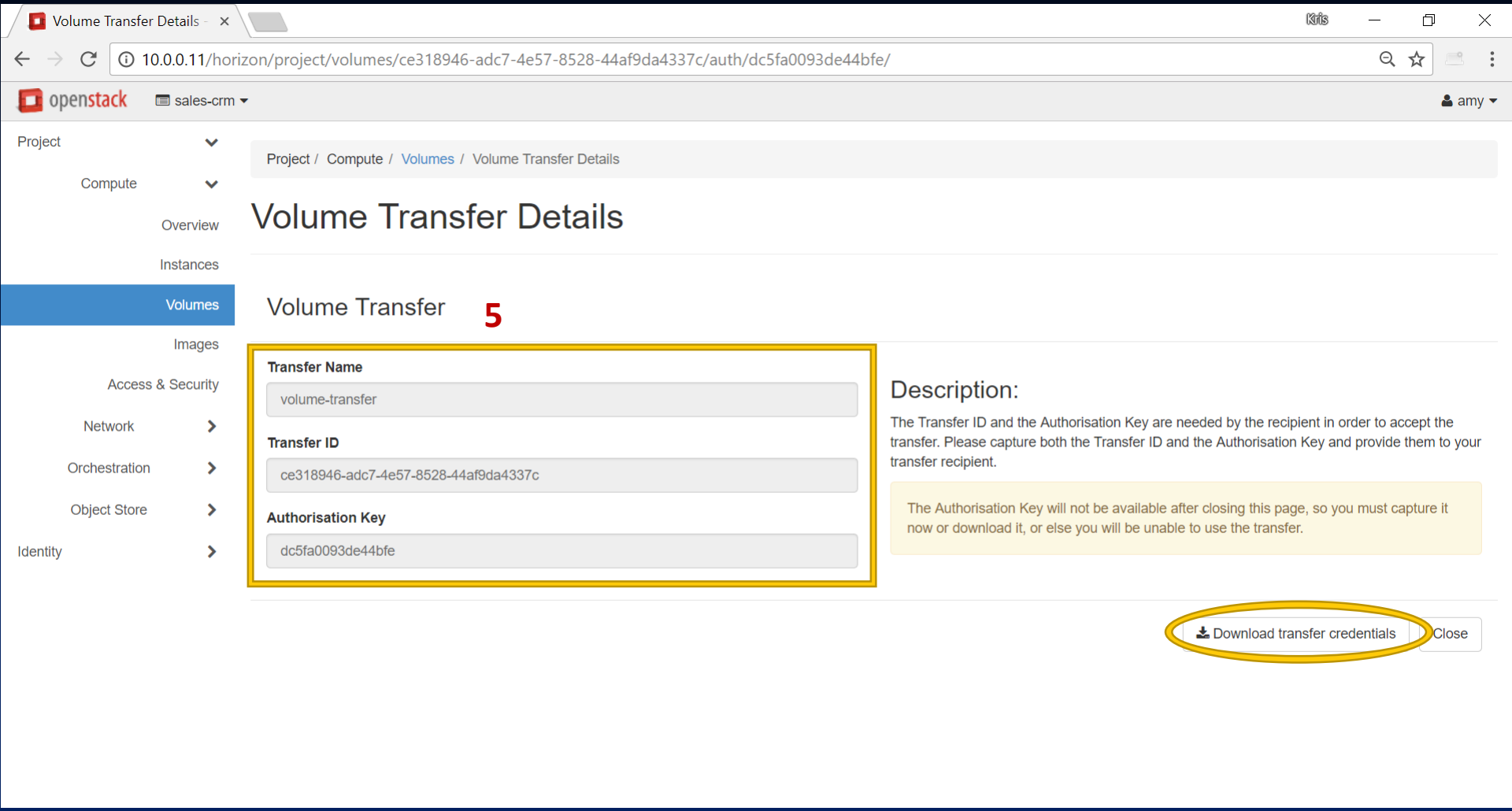
Create Volume Transfer



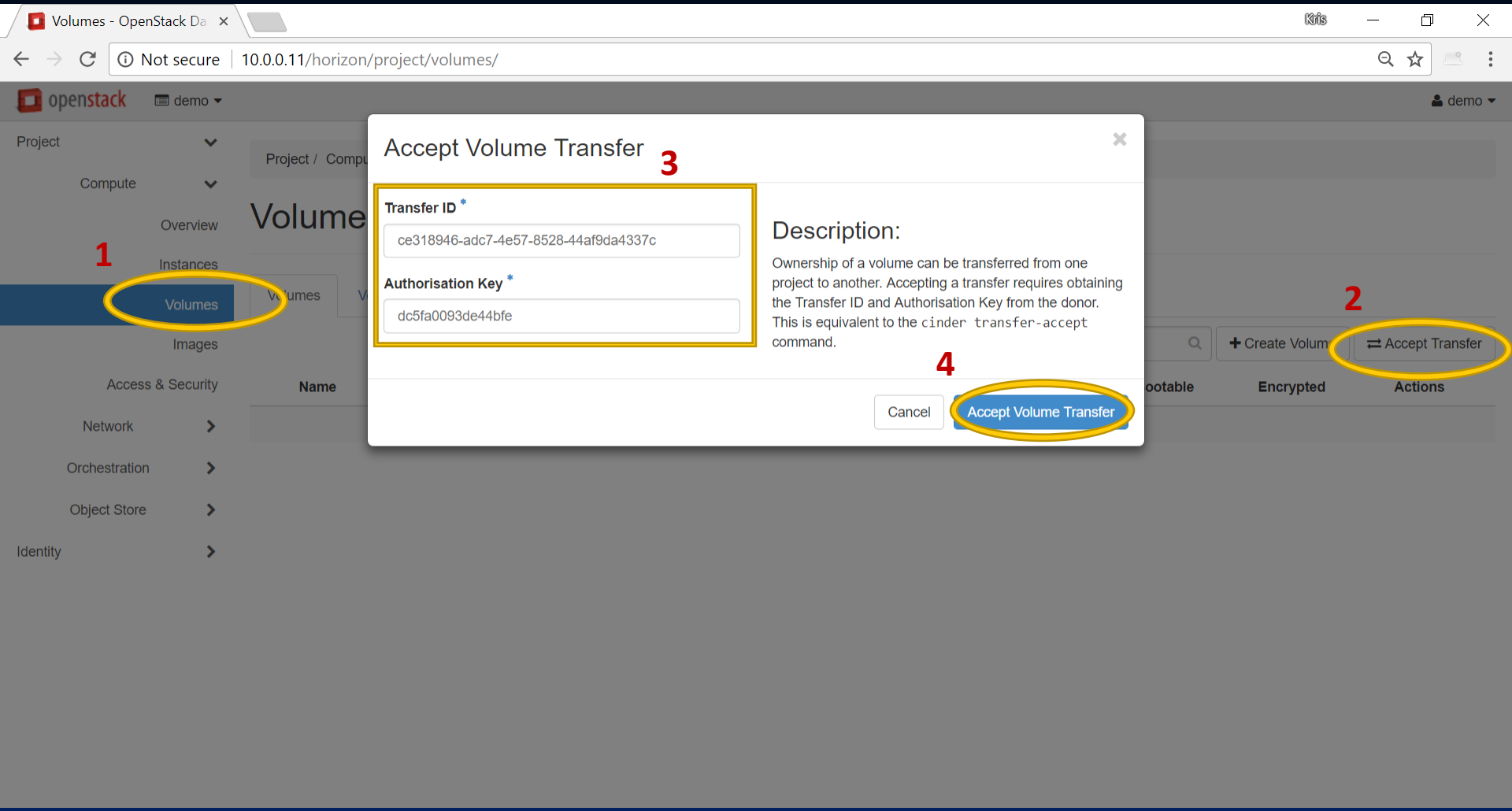
Create Volume Transfer



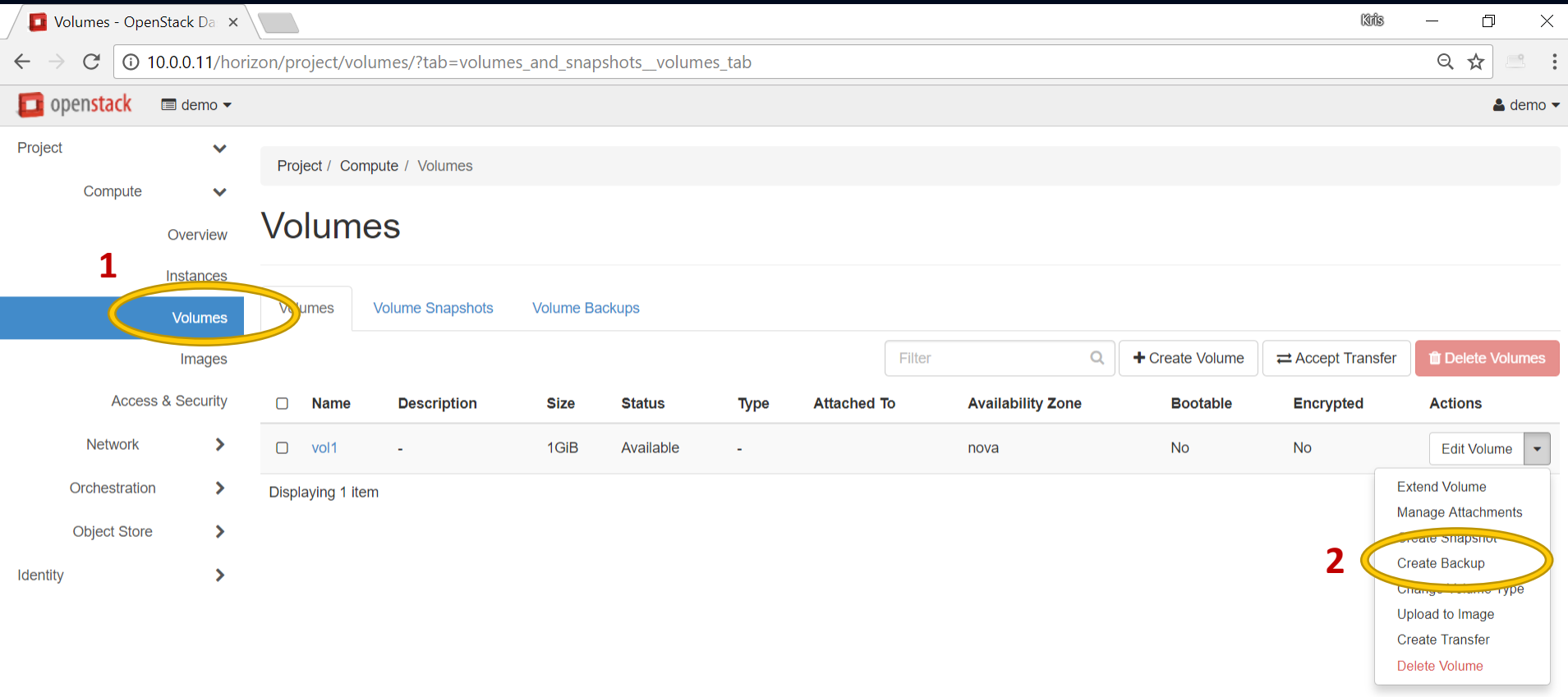
Create Volume Transfer



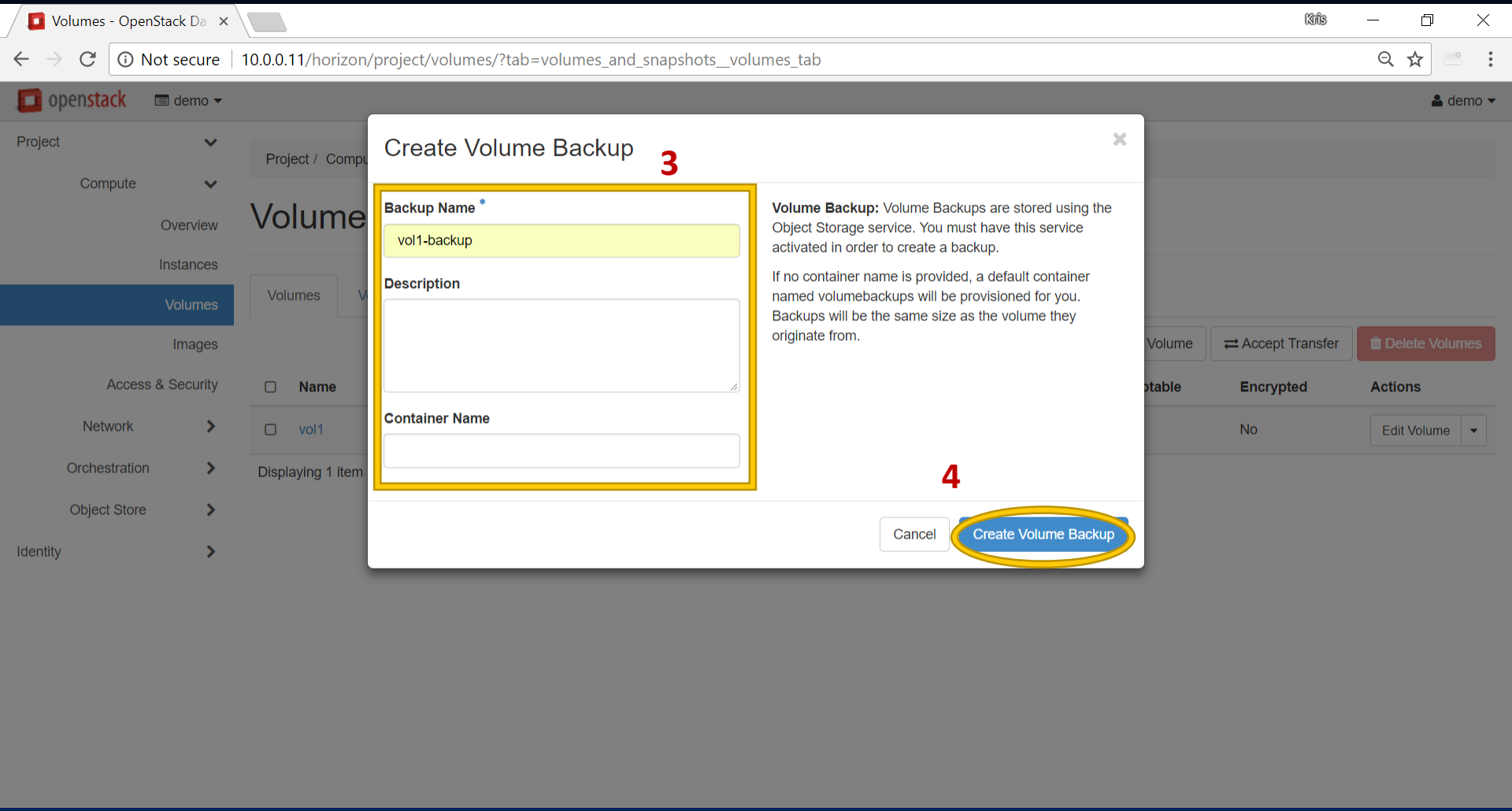
Accept Volume Transfer



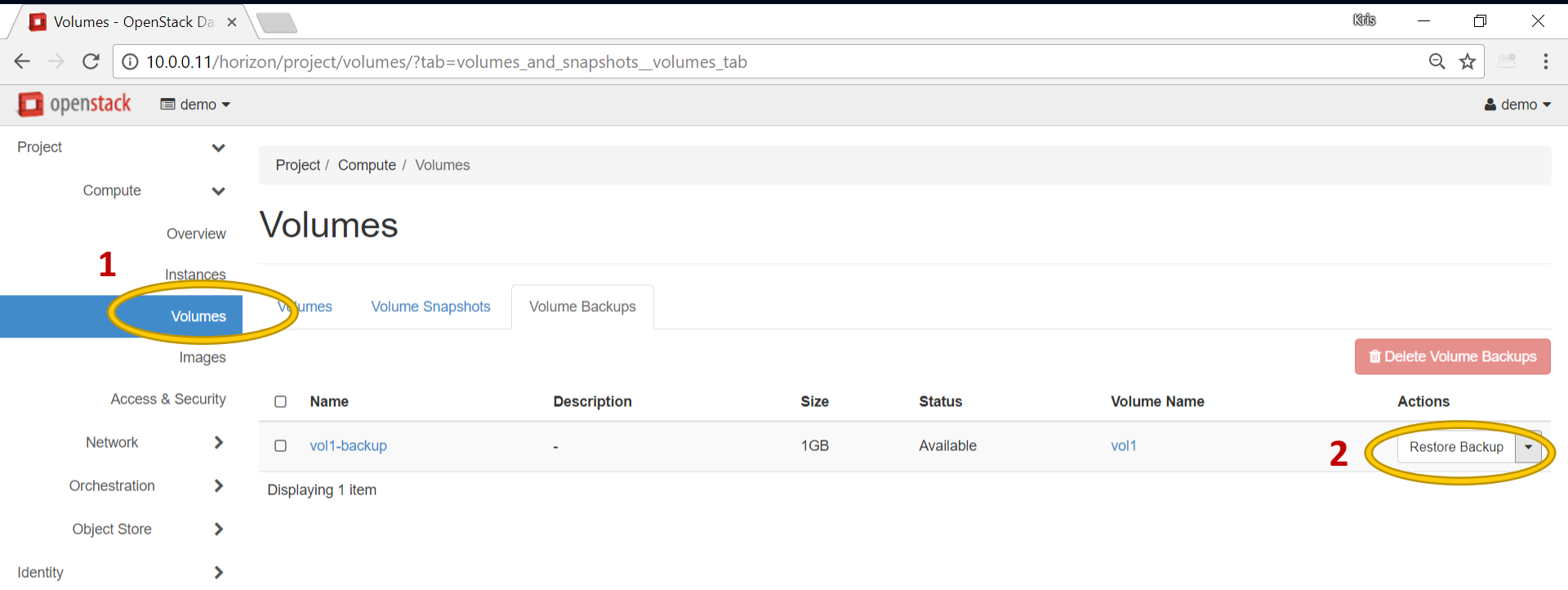
Create a Volume Backup



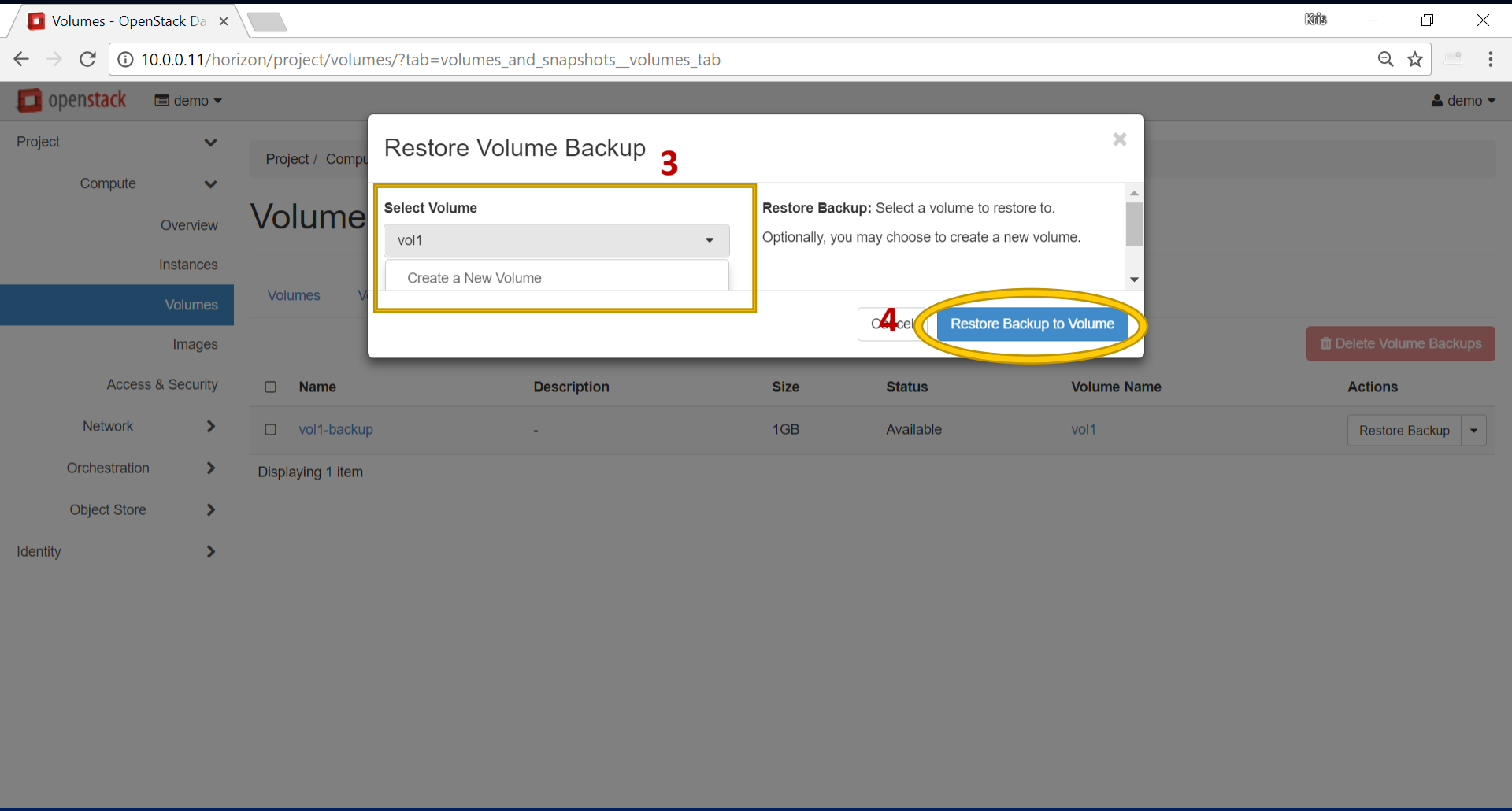
Create a Volume Backup



Restore a Volume Backup



Restore a Volume Backup



CLI Review

```
$ openstack volume create --size <size in GB> \
  --source <volume> | --image <image> | --snapshot <snap> \
  --type <volume-type> --description "…" \
  <volume-name>

$ openstack volume list
$ openstack volume list --all-projects --long
$ openstack volume show <volume>

$ openstack server add volume <instance> <volume>
```

CLI Review

```
$ openstack server add volume <instance> <volume>

$ ssh <user>@<instance IP address>

$ sudo su
# fdisk -l
# mkfs.ext3 /dev/vdb
# mount /dev/vdb /mnt
…
# umount /dev/vdb

$ openstack server remove volume <instance> <volume>
```

CLI Review

```
$ openstack snapshot create --name <snapshot-name> \
  --description "…" --force \
  <volume-name>

$ openstack snapshot list
$ openstack snapshot list --all-projects --long
$ openstack snapshot show <snapshot-name>

$ openstack volume create --snapshot <snapshot-name> \
  --size <in GB> <restored-volume-name>
```

CLI Review

```
$ openstack volume backup create --name <backup-name> \
  --description "…" --force \
  --snapshot <snapshot> --container <swift-container> \
  <volume-name>

$ openstack volume backup list
$ openstack volume backup show <backup-name>

$ openstack volume backup restore <backup> <volume>
```

CLI Review

```
$ cinder quota-defaults <project>

$ cinder quota-show <project>

$ cinder quota-usage <project>

$ cinder quota-update --volumes <volumes> \
  --snapshots <snapshots> --backups <backups> \
  --gigabytes <gigabytes> --volume-type <volume-type> \
  --consistencygroups <consistencygroups> \
  --per-volume-gigabytes <per-volume-gigabytes> \
  <project>
```

CLI Review

```
$ cinder transfer-create --name <transfer-name> <volume>

$ cinder transfer-accept <transfer-id> <auth-key>

$ cinder transfer-list --all-tenants

$ cinder transfer-show

$ cinder transfer-delete <transfer-id>
```

CLI Review

```
$ openstack volume type create \
  --property volume_backend_name=<backend-name> <type-name>

$ openstack volume type create <encrypted-volume-type-name>
$ cinder encryption-type-create --key_size 256 \
  --cipher aes-xts-plain64 \
  --control-location <front-end | back-end> \
  <encrypted-volume-type-name> \
  nova.volume.encryptors.luks.LuksEncryptor

$ openstack volume create --size 1 --type <type> <volume>
```

CLI Review

```
$ cinder get-capabilities <host@backend>

$ cinder get-pools --detail

$ openstack volume service list --long
```

Open Cloud Consulting

Preparing to **Certified OpenStack Administrator** Exam

Section 7 – Cinder Block Storage

Lecture 30. Cinder Summary and Review

Thank you!