Linux Academy

Live! Lab

Creating an Encrypted Volume

Contents

Lab Connection Information

- Labs may take up to five minutes to build
- Access to the Horizon Dashboard is provided on the Live! Lab page, along with your login credentials
- SSH information is provided on the Live! Lab page
- Labs will automatically end once the alloted amount of time finishes

Related Courses

OpenStack Foundation Certified OpenStack Administrator

Related Videos

Manage Volume Encryption

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Introduction

In this lab, we create an encrypted volume using Cinder.

Log in to the Horizon Dashboard as *admin*, and set the tenant to *admin*. Download the **OpenStack RC File** from the **Access & Security** page, under the **API Access** tab.

Using the SSH details on the **Live! Lab** page, log in to your server via the terminal. Copy the contents of the OpenStack RC file to your server using your text editor of choice or `scp`. The file should be called *admin.sh*.

Source the file, inputting your OpenStack password when prompted:

```
root@openstack:~# source admin.sh
```

Preparing for Encryption

Using the Cinder CLI, we need to create a volume type for LUKS, the Linux Unified Key Setup.

```
root@openstack:~# cinder type-create LUKS
+--------------------------------------+------+-------------+-----------+
|                  ID                  | Name | Description | Is_Public |
+--------------------------------------+------+-------------+-----------+
| dae0aebd-e3fb-4cc0-9fe1-178af13ee6be | LUKS |      -      |    True   |
+--------------------------------------+------+-------------+-----------+
```

We now need to create a cipher using a `512` key size, the Nova encrypter, and `aes-xts-plain64 cipher` type. The `control-location` denotes where the encryption is performed.

```
root@openstack:~# cinder encryption-type-create --cipher aes-xts-plain64 --key_size 512
--control_location front-end LUKS nova.volume.encryptors.luks.LuksEncryptor
+----------------+-----------------------------+-----------------+-----+-----------------+
| Volume Type ID |          Provider           |      Cipher     | Key | Control Location|
+----------------+-----------------------------+-----------------+-----+-----------------+
| dae0aebd-e3fb- | nova.volume.encryptors.luks | aes-xts-plain64 | 512 |    front-end    |
+----------------+-----------------------------+-----------------+-----+-----------------+
```

Creating an Encrypted Volume

With the appropriate volume and encryption type added, we can now create a 1 GB encrypted volume.

```
root@openstack:~# cinder create --display-name EncryptedVolume --volume-type LUKS 1
+--------------------------------------+--------------------------------------+
|               Property               |                Value                 |
```

```
+---------------------------------------+--------------------------------------+
|              attachments              |                  []                  |
|           availability_zone           |                 nova                 |
|                bootable               |                false                 |
|          consistencygroup_id          |                 None                 |
|               created_at              |      2016-04-12T15:26:31.000000      |
|              description              |                 None                 |
|               encrypted               |                 True                 |
|                   id                  | e5c95538-2116-4052-94f8-fa3f550820b4 |
|                metadata               |                  {}                  |
|           migration_status            |                 None                 |
|              multiattach              |                False                 |
|                   name                |           EncryptedVolume            |
|         os-vol-host-attr:host         |                 None                 |
|     os-vol-mig-status-attr:migstat    |                 None                 |
|     os-vol-mig-status-attr:name_id    |                 None                 |
|      os-vol-tenant-attr:tenant_id     |   9e252e07d17e4121b2670d1b41caf77a   |
|   os-volume-replication:driver_data   |                 None                 |
| os-volume-replication:extended_status |                 None                 |
|           replication_status          |               disabled               |
|                   size                |                  1                   |
|              snapshot_id              |                 None                 |
|              source_volid             |                 None                 |
|                 status                |               creating               |
|                user_id                |   78e2636372d342d48e5ba284ffb89ac6   |
|              volume_type              |                 LUKS                 |
+---------------------------------------+--------------------------------------+
```

Run `cinder list` to confirm that the volume has been created.