

OpenStack: How to backup and restore OpenStack instances between Bright 8.x upgrades?

How to backup and restore OpenStack instances between Bright 8.x upgrades?

Introduction:

One of the prerequisites for upgrading Bright clusters (e.g. from version 8.1 to 8.2) is to remove the OpenStack deployment and redeploy it again after the upgrade.

Doing so without a backup will cost you your instances!

Other OpenStack objects such as networks, subnets, users, etc. can be recreated, but it is hard to do so with the instances.

The steps below walk you through exporting and importing some sample OpenStack instances from Bright 8.1 to 8.2. In theory these could be applied to other Bright OpenStack releases.

Note 1: support for taking snapshots of volumes residing on NFS Cinder backends (using NFS_Driver) was not added until Bright OpenStack 8.1, because the feature was not available in upstream OpenStack before then. This means that you will not be able to export these Cinder volumes if you are using Bright OpenStack older than 8.1.

Note 2: What we are exporting here are the instances' disks, and not the instance configs such as flavor, floating IP addresses, etc. You show the information either in CLI or the OpenStack Dashboard and use the information to build the instances later with the exported disks.

Note 3: It is a good practice is to use your backup solution to backup any important data inside the instance, so that you can rebuild the instance again if needed from scratch by importing the data again. This might be what an administrator would have to do in the case of data corruption.

Exporting OpenStack instances:

List your OpenStack instances:

```
[root@maa-81 ~]# openstack server list -c Name -c Status -c Image
```

```
+-----+-----+-----+
```

```
| Name   | Status | Image |
```

```
+-----+-----+-----+
```

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```
| server3 | SHUTOFF |    |
```

```
| server2 | ACTIVE | centos |
```

```
| server1 | ACTIVE | cirros |
```

```
+-----+-----+-----+
```

Gracefully shutdown the instances you want to export. It is best to do it from the OS itself:

```
[root@maa-81 ~]# openstack server stop server1
```

```
[root@maa-81 ~]# openstack server stop server2
```

Make sure that the instances are shutoff:

```
[root@maa-81 ~]# openstack server list -c Name -c Status -c Image
```

```
+-----+-----+-----+
```

```
| Name   | Status | Image |
```

```
+-----+-----+-----+
```

```
| server3 | SHUTOFF |    |
```

```
| server2 | SHUTOFF | centos |
```

```
| server1 | SHUTOFF | cirros |
```

```
+-----+-----+-----+
```

Note: Make sure you have enough available storage in Glance backend to store the newly-created image.

Create a snapshot of the instance:

```
[root@maa-81 ~]# openstack server image create --name server1_snap server1 --fit-width
```

```
+-----+-----+-----+
```

```
| Field      | Value |
```

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checksum	None	
container_format	None	
created_at	2019-06-11T14:20:35Z	
disk_format	None	
file	/v2/images/59da8cdf-3fea-4862-9f6c-80670aa2f120/file	
id	59da8cdf-3fea-4862-9f6c-80670aa2f120	
min_disk	1	
min_ram	0	
name	server1_snap	
owner	7867e02001d64c0dbfb32001558d1485	
properties	base_image_ref='55368fcb-091c-463b-8c14-862babb5175c', boot_roles='admin,heat_stack_owner',	
	image_type='snapshot', instance_uuid='b37ad155-7d5d-	
	4c48-a307-5c156861a9fa', owner_project_name='bright', owner_user_name='admin',	
	user_id='d886f9f1e0e14441bce7e8b7f338f5f2'	
protected	False	
schema	/v2/schemas/image	
size	None	
status	queued	
tags		
updated_at	2019-06-11T14:20:35Z	
virtual_size	None	
visibility	private	

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Wait till the image is uploaded and the image status is "active":

```
[root@maa-81 ~]# openstack image show server1_snap --fit-width
```

```
+-----+-----+
| Field      | Value                                                                 |
+-----+-----+
| checksum   | 884c9672e8b61820570bef4aabc70c11                                   |
| container_format | bare                                                                |
| created_at  | 2019-06-11T14:20:35Z                                             |
| disk_format | qcow2                                                                |
| file       | /v2/images/59da8cdf-3fea-4862-9f6c-80670aa2f120/file             |
| id         | 59da8cdf-3fea-4862-9f6c-80670aa2f120                             |
| min_disk   | 1                                                                    |
| min_ram    | 0                                                                    |
| name       | server1_snap                                                       |
| owner      | 7867e02001d64c0dbfb32001558d1485                                 |
| properties | base_image_ref='55368fcb-091c-463b-8c14-862babb5175c',           |
|           | boot_roles='admin,heat_stack_owner',                             |
|           | direct_url='file:///cm/shared/apps/openstack/glance-images       |
|           | /59da8cdf-3fea-4862-9f6c-80670aa2f120', image_location='snapshot', |
|           | image_state='available', image_type='snapshot', instance_uuid='b37ad155-7d5d- |
|           | 4c48-a307-5c156861a9fa', owner_id='7867e02001d64c0dbfb32001558d1485', |
|           |
|           | owner_project_name='bright', owner_user_name='admin',           |
|           | user_id='d886f9f1e0e14441bce7e8b7f338f5f2'                       |
+-----+-----+
```

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protected	False
schema	/v2/schemas/image
size	40042496
status	active
tags	
updated_at	2019-06-11T14:20:38Z
virtual_size	None
visibility	private

+-----+

Download the image:

```
[root@maa-81 ~]# openstack image save --file server1-image.qcow2 server1_snap
```

```
[root@maa-81 ~]# ll -h server1-image.qcow2
```

```
-rw-r--r-- 1 root root 39M Jun 11 16:26 server1-image.qcow2
```

Another example is shown next.

Here the same steps are repeated for a relatively large instance:

```
[root@maa-81 ~]# openstack server image create --name server2_snap server2 --fit-width
```

+-----+

Field	Value
checksum	None
container_format	None
created_at	2019-06-11T14:34:13Z

+-----+

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```
| disk_format | None |
| file | /v2/images/ce5ca46c-02f9-47c2-b8e5-e7174f42d9c3/file |
| id | ce5ca46c-02f9-47c2-b8e5-e7174f42d9c3 |
| min_disk | 10 |
| min_ram | 0 |
| name | server2_snap |
| owner | 7867e02001d64c0dbfb32001558d1485 |
| properties | base_image_ref='e7e697a4-27d1-49a9-af89-0a899090f816',
boot_roles=admin,heat_stack_owner,
|
| image_type='snapshot', instance_uuid='7c69402c-63f3-4aff-9dec-1d1c8fd8e544', owner_project |
|
| _name='bright', owner_user_name='admin', user_id='d886f9f1e0e14441bce7e8b7f338f5f2' |
|
| protected | False |
| schema | /v2/schemas/image |
| size | None |
| status | queued |
| tags | |
| updated_at | 2019-06-11T14:34:13Z |
| virtual_size | None |
| visibility | private |
```

-----+

```
[root@maa-81 ~]# openstack image show server2_snap --fit-width
```

-----+

```
| Field | Value |
-----+
```

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```
| checksum      | 397bed9b56b66abc01b0135699a57340 |
| container_format | bare |
| created_at    | 2019-06-11T14:34:13Z |
| disk_format   | qcow2 |
| file          | /v2/images/ce5ca46c-02f9-47c2-b8e5-e7174f42d9c3/file |
| id            | ce5ca46c-02f9-47c2-b8e5-e7174f42d9c3 |
| min_disk      | 10 |
| min_ram       | 0 |
| name          | server2_snap |
| owner         | 7867e02001d64c0dbfb32001558d1485 |
| properties    | base_image_ref='e7e697a4-27d1-49a9-af89-0a899090f816',
boot_roles='admin,heat_stack_owner',|
|               | direct_url='file:///cm/shared/apps/openstack/glance-images/ce5ca46c-02f9-47c2-b8e5-
|               | e7174f42d9c3', image_location='snapshot', image_state='available', image_type='snapshot', |
|               | instance_uuid='7c69402c-63f3-4aff-9dec-1d1c8fd8e544', owner_id=
|               | '7867e02001d64c0dbfb32001558d1485', owner_project_name='bright', owner_user_name='admin', |
|               | user_id='d886f9f1e0e14441bce7e8b7f338f5f2' |
| protected     | False |
| schema        | /v2/schemas/image |
| size          | 948305920 |
| status        | active |
| tags          | |
| updated_at    | 2019-06-11T14:35:19Z |
| virtual_size  | None |
```

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```
| visibility      | private                |
```

```
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
```

```
[root@maa-81 ~]# openstack image save --file server2-image.qcow2 server2_snap
```

```
[root@maa-81 ~]# ll -h server2-image.qcow2
```

```
-rw-r--r-- 1 root root 905M Jun 11 16:37 server2-image.qcow2
```

The 3rd example is an instance that is booting from a volume that was created from an image “note volumes_attached below”, the steps will be slightly different:

```
[root@maa-81 ~]# openstack server show server3 --fit-width
```

```
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
```

```
| Field                | Value                |
```

```
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
```

```
| OS-DCF:diskConfig    | AUTO                |
```

```
| OS-EXT-AZ:availability_zone | default            |
```

```
| OS-EXT-SRV-ATTR:host | node002             |
```

```
| OS-EXT-SRV-ATTR:hypervisor_hostname | node002.cm.cluster |
```

```
| OS-EXT-SRV-ATTR:instance_name | instance-00000003  |
```

```
| OS-EXT-STS:power_state | Shutdown           |
```

```
| OS-EXT-STS:task_state | None               |
```

```
| OS-EXT-STS:vm_state   | stopped           |
```

```
| OS-SRV-USG:launched_at | 2019-06-11T11:53:36.000000 |
```

```
| OS-SRV-USG:terminated_at | None               |
```

```
| accessIPv4           |                    |
```

```
| accessIPv6           |                    |
```


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```
| addresses          | bright-internal-flat-internalnet=10.141.152.7 |
| config_drive      |          |
| created           | 2019-06-11T11:52:53Z |
| flavor            | m1.xsmall (24e98e78-1277-40c2-bc75-f4f520180f97) |
| hostId            | 401a6ab41b7e9835303dc15cad607df11a599ccd1a0ebfb8b1745b32
|
| id                | 54457824-2030-447a-8b43-d70aff6ab048 |
| image             |          |
| key_name          | keypair1 |
| name              | server3 |
| project_id        | 7867e02001d64c0dbfb32001558d1485 |
| properties        |          |
| security_groups   | name='default' |
| status            | SHUTOFF |
| updated           | 2019-06-11T11:58:46Z |
| user_id           | d886f9f1e0e14441bce7e8b7f338f5f2 |
| volumes_attached  | id='3555e52d-0c2d-49d7-9ea9-3e6fb6a6820d' |
```

-----+

```
[root@maa-81 ~]# openstack volume show 3555e52d-0c2d-49d7-9ea9-3e6fb6a6820d --fit-width
```

-----+

```
| Field          | Value |
|-----+-----+-----|
```

```
| attachments    | [{u'server_id': u'54457824-2030-447a-8b43-d70aff6ab048',
u'attachment_id': |
```

```
|               | u'a69cec35-1504-4afc-8585-359c9873d290', u'attached_at': u'2019-06-11T11:53:27' |
```

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[.000000', u'host_name': None, u'volume_id': u'3555e52d-0c2d-49d7-9ea9-3e6fb6a6]

[820d', u'device': u'/dev/vda', u'id': u'3555e52d-0c2d-49d7-9ea9-3e6fb6a6820d']]

availability_zone	default-az	
bootable	true	
consistencygroup_id	None	
created_at	2019-06-11T11:52:57.000000	
description		
encrypted	False	
id	3555e52d-0c2d-49d7-9ea9-3e6fb6a6820d	
migration_status	None	
multiattach	False	
name		
os-vol-host-attr:host	node001@nfs#nfs	
os-vol-mig-status-attr:migstat	None	
os-vol-mig-status-attr:name_id	None	
os-vol-tenant-attr:tenant_id	7867e02001d64c0dbfb32001558d1485	
properties	attached_mode='rw'	
replication_status	None	
size	10	
snapshot_id	None	
source_valid	None	
status	in-use	
type	None	
updated_at	2019-06-11T11:53:27.000000	

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```
| user_id                | d886f9f1e0e14441bce7e8b7f338f5f2 |
| volume_image_metadata | {u'container_format': u'bare', u'min_ram': u'0', u'disk_format':
u'qcow2', u'i
|
| image_name': u'centos', u'image_id': u'e7e697a4-27d1-49a9-af89-0a899090f816', |
|
| u'checksum': u'26c52282b53e6fe746fbfd5542421675', u'min_disk': u'0', u'size': |
|
| u'938409984' |
```

-----+

Based on your Bright/OpenStack version, the Cinder backends used and the state of the volumes in-use/available, you might need to tweak Cinder's configuration:

```
[root@maa-81 ~]# cmsgsh
```

```
[maa-81]% configurationoverlay
```

```
[maa-81->configurationoverlay]% use openstackcontrollers
```

```
[maa-81->configurationoverlay[OpenStackControllers]->customizations]% list
```

```
File (key)      Type      Label Enabled
-----
```

```
[maa-81->configurationoverlay[OpenStackControllers]->customizations]% add
/etc/cinder/cinder.conf
```

```
[maa-81->...]->customizations*[/etc/cinder/cinder.conf*]]% entries
```

```
[maa-81->...]->customizations[/etc/cinder/cinder.conf]->entries]% add [nfs]\
nfs_snapshot_support
```

```
[maa-81->...]->customizations*[/etc/cinder/cinder.conf*]->entries*[[nfs]
nfs_snapshot_support*]]% set value True
```

```
[maa-81->...]->customizations*[/etc/cinder/cinder.conf*]->entries*[[nfs]
nfs_snapshot_support*]]% ..
```

```
[maa-81->...]->customizations[/etc/cinder/cinder.conf]->entries]% add [default]\
enable_force_upload
```

```
[maa-81->...]->customizations*[/etc/cinder/cinder.conf*]->entries*[[default]
```

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```
enable_force_upload*]]% set value True
```

```
[maa-81->...]->customizations*[etc/cinder/cinder.conf*]->entries*[[default]
enable_force_upload*]]%..
```

```
[maa-81->...]->customizations[etc/cinder/cinder.conf]->entries]% add [nfs]\
nas_secure_file_operations
```

```
[maa-81->...]->customizations*[etc/cinder/cinder.conf*]->entries*[[nfs]
nas_secure_file_operations*]]% set value False
```

```
[maa-81->...]->customizations*[etc/cinder/cinder.conf*]->entries*[[nfs]
nas_secure_file_operations*]]% commit
```

Wait for Cinder services to be restarted on the controller nodes by `cmdaemon`.

What we need to do here is to upload a copy of the volume, whether a boot volume or a regular one, to an image.

If the volume status is “in-use” and the instance is running, then you must use operating system tools to sync/quiesce any data in memory to the volume and make sure no further modifications are written to the filesystem to insure data consistency during the copy, it’s better if you shutdown the instance.

If you are using an old version of OpenStack or if your Cinder backend doesn’t allow uploading an image from an “in-use” volume; then you will have to take a snapshot from the volume first, create a new volume from it, upload that “available” volume to an image and then download the image.

Create a volume snapshot. Note we are using the “--force” option since the volume is “in-use”, typically it should be in state “available” after detaching it from the instance and before creating the snapshot, but here we are sure that the instance is powered off and nothing is writing to the volume.

Now, we upload the volume to an image:

```
[root@maa-81 ~]# openstack image create --volume 3555e52d-0c2d-49d7-9ea9-3e6fb6a6820d
--force server3-image
```

```
+-----+-----+
```

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Field	Value
container_format	bare
disk_format	raw
display_description	
id	3555e52d-0c2d-49d7-9ea9-3e6fb6a6820d
image_id	e49f314f-6826-4709-915f-41768335bec4
image_name	server3-image
protected	False
size	10
status	uploading
updated_at	2019-06-17T13:39:46.000000
visibility	shared
volume_type	None

Wait till the upload is complete:

```
[root@maa-81 ~]# openstack image show server3-image
```

Field	Value
checksum	73b188fb7aa85c6ffdfb95853c1022a8
container_format	bare
created_at	2019-06-17T13:47:46Z
disk_format	raw

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```
| file          | /v2/images/e49f314f-6826-4709-915f-41768335bec4/file |
| id           | e49f314f-6826-4709-915f-41768335bec4 |
| min_disk    | 0 |
| min_ram     | 0 |
| name        | server3-image |
| owner       | 7867e02001d64c0dbfb32001558d1485 |
| properties  |
direct_url='file:///cm/shared/apps/openstack/glance-images/e49f314f-6826-4709-915f-
|             | 41768335bec4' |
| protected   | False |
| schema      | /v2/schemas/image |
| size        | 10737418240 |
| status      | active |
| tags        | |
| updated_at  | 2019-06-17T13:50:06Z |
| virtual_size | None |
| visibility  | shared |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
```

The last step is to download the image:

```
[root@maa-81 ~]# openstack image save --file server3-image.raw server3-image
```

If you need to take volume snapshots first, or if you already have volume snapshots that you want to export, then:

```
[root@maa-81 ~]# openstack volume snapshot create --volume
3555e52d-0c2d-49d7-9ea9-3e6fb6a6820d server3_vol_snap --force --fit-width
```

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```
+-----+
| Field      | Value                               |
+-----+
| created_at | 2019-06-11T16:11:00.163438         |
| description | None                               |
| id         | 366e429b-6ca4-405b-bcd1-c20f473921ef |
| name       | server3_vol_snap                   |
| properties |                                     |
| size       | 10                                  |
| status     | creating                            |
| updated_at | None                                 |
| volume_id  | 3555e52d-0c2d-49d7-9ea9-3e6fb6a6820d |
+-----+
```

Wait till the volume snapshot is available

```
[root@maa-81 ~]# openstack volume snapshot show server3_vol_snap
```

```
+-----+
| Field      | Value                               |
+-----+
| created_at | 2019-06-11T16:11:00.000000         |
| description | None                               |
| id         | 366e429b-6ca4-405b-bcd1-c20f473921ef |
| name       | server3_vol_snap                   |
| os-extended-snapshot-attributes:progress | 100%                               |
+-----+
```

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```
| os-extended-snapshot-attributes:project_id | 7867e02001d64c0dbfb32001558d1485 |
| properties                               |                               |
| size                                     | 10                             |
| status                                   | available                       |
| updated_at                              | 2019-06-11T16:11:04.000000    |
| volume_id                               | 3555e52d-0c2d-49d7-9ea9-3e6fb6a6820d |
```

+-----+-----+

Convert the volume snapshot to a volume then follow the above steps to upload it to an image and download the image. Note that the new volume size should be equivalent to the snapshot size:

```
[root@maa-81 ~]# openstack volume create --snapshot server3_vol_snap --size 10
server3_vol_from_snap
```

```
+-----+-----+
| Field          | Value                               |
+-----+-----+
| attachments    | []                                  |
| availability_zone | default-az                          |
| bootable       | false                               |
| consistencygroup_id | None                                |
| created_at     | 2019-06-17T14:44:20.338991         |
| description    | None                                |
| encrypted      | False                               |
| id             | 93e5953d-2587-41bf-bcd1-91d28671b772 |
| migration_status | None                                |
| multiattach    | False                               |
```


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```
| name          | server3_vol_from_snap          |
| properties    |                                |
| replication_status | None                          |
| size          | 10                             |
| snapshot_id   | 366e429b-6ca4-405b-bcd1-c20f473921ef |
| source_volid  | None                           |
| status        | creating                       |
| type          | None                           |
| updated_at    | None                           |
| user_id       | d886f9f1e0e14441bce7e8b7f338f5f2 |
```

```
+-----+-----+
```

Test exported images:

Before moving on and destroying the current OpenStack environment, make sure that the images you have exported are usable. Setup a separate test environment, or maybe

even on the same OpenStack cluster, to import the images (next section), to make sure you have all the data you wanted and to check there is no filesystem corruption.

Import the exported images:

After setting up the new OpenStack environment, you will need to upload all the exported images, either using the OpenStack Dashboard or the CLI:

For QCOW2 images:

```
[root@maa-82 ~]# openstack image create --container-format bare --disk-format qcow2 --file
<image_file_name> <image_name>
```

For raw images:

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```
[root@maa-82 ~]# openstack image create --container-format bare --disk-format raw --file <image_file_name> <image_name>
```

If you are not sure about the format; then you can use the `qemu-img` command:

```
[root@maa-82 ~]# qemu-img info server2-image.qcow2
```

```
image: server2-image.qcow2
```

```
file format: qcow2
```

```
virtual size: 10G (10737418240 bytes)
```

```
disk size: 904M
```

```
cluster_size: 65536
```

```
Format specific information:
```

```
  compat: 1.1
```

```
  lazy refcounts: false
```

Now, you can create OpenStack instances with the imported images with the flavor you need, usually matching what was used in the old environment.

Additionally, you can create volumes from these images and create OpenStack instances to boot from the volumes created:

```
[root@maa-82 ~]# openstack server create --wait --image server2-image --nic net-id=bright-internal-flat-internalnet --flavor m1.xsmall --key-name keypair1 server2-new
```

Field	Value
OS-DCF:diskConfig	MANUAL
OS-EXT-AZ:availability_zone	default
OS-EXT-SRV-ATTR:host	node003

OpenStack: How to backup and restore OpenStack instances between Bright 8.x upgrades?

OS-EXT-SRV-ATTR:hypervisor_hostname	node003.cm.cluster	
OS-EXT-SRV-ATTR:instance_name	instance-00000003	
OS-EXT-STS:power_state	Running	
OS-EXT-STS:task_state	None	
OS-EXT-STS:vm_state	active	
OS-SRV-USG:launched_at	2019-08-05T10:33:40.000000	
OS-SRV-USG:terminated_at	None	
accessIPv4		
accessIPv6		
addresses	bright-internal-flat-internalnet=10.141.152.2	
adminPass	6d9bPsDWD8vr	
config_drive		
created	2019-08-05T10:33:18Z	
flavor	m1.xsmall (1454e056-04b6-4283-aecd-c0d4ed9d8d2c)	
hostId	8c11215bc2aabbc63ea6f7851533e5d0007f998062c8607bf7bb6ad9	
id	66247212-52a1-4779-ac5a-d21969a1095e	
image	server2-image (52f76a36-b9e4-401e-8e9d-1b4be12b0ee4)	
key_name	keypair1	
name	server2-new	
progress	0	
project_id	3f7996eb583148b0be209c613af9fe4f	
properties		
security_groups	name='default'	
status	ACTIVE	

OpenStack: How to backup and restore OpenStack instances between Bright 8.x upgrades?

```
| updated                | 2019-08-05T10:33:40Z                |
| user_id                | 6eb532ea6fbd466b85fd06b4b05c961c  |
| volumes_attached      |                                     |
+-----+-----+
```

```
[root@maa-82 ~]# ssh centos@10.141.152.2 -i keypair1.pem
```

```
Last login: Tue Jun 11 11:50:40 2019 from 10.141.255.254
```

```
[centos@server2-new ~]$ ls
```

```
file1.txt
```

```
[centos@server2-new ~]$ cat file1.txt
```

```
zdfvdsfvdsfdf
```

```
[centos@server2-new ~]$
```

```
-----
```

```
[root@maa-82 ~]# openstack volume create --image server3-image --size 11
server3-volume-new
```

```
[root@maa-82 ~]# openstack server create --wait --volume server3-volume-new --nic
net-id=bright-internal-flat-internalnet --flavor m1.xsmall --key-name keypair1 server3-new
```

```
+-----+-----+
| Field                | Value                |
+-----+-----+
| OS-DCF:diskConfig    | MANUAL              |
| OS-EXT-AZ:availability_zone | default            |
| OS-EXT-SRV-ATTR:host | node003             |
| OS-EXT-SRV-ATTR:hypervisor_hostname | node003.cm.cluster |
```

OpenStack: How to backup and restore OpenStack instances between Bright 8.x upgrades?

```
| OS-EXT-SRV-ATTR:instance_name      | instance-00000004      |
| OS-EXT-STS:power_state              | Running                |
| OS-EXT-STS:task_state               | None                   |
| OS-EXT-STS:vm_state                 | active                 |
| OS-SRV-USG:launched_at              | 2019-08-05T11:17:51.000000 |
| OS-SRV-USG:terminated_at            | None                   |
| accessIPv4                           |                         |
| accessIPv6                           |                         |
| addresses                             | bright-internal-flat-internalnet=10.141.152.15 |
| adminPass                             | D5Vm2L9UVtEW          |
| config_drive                          |                         |
| created                               | 2019-08-05T11:17:41Z   |
| flavor                               | m1.xsmall (1454e056-04b6-4283-aecd-c0d4ed9d8d2c) |
| hostId                               | 8c11215bc2aabbc63ea6f7851533e5d0007f998062c8607bf7bb6ad9 |
| id                                    | 39bf6e0b-0f7a-4f2a-a0fb-ce9aedde5e49 |
| image                                 |                         |
| key_name                              | keypair1               |
| name                                  | server3-new            |
| progress                              | 0                       |
| project_id                            | 3f7996eb583148b0be209c613af9fe4f |
| properties                             |                         |
| security_groups                       | name='default'        |
| status                                | ACTIVE                 |
| updated                               | 2019-08-05T11:17:52Z   |
```

OpenStack: How to backup and restore OpenStack instances between Bright 8.x upgrades?

```
| user_id          | 6eb532ea6fbd466b85fd06b4b05c961c |
| volumes_attached | id='6ed6d0f7-d2db-4d2e-b423-052671bfeca3' |
```

```
+-----+-----+
```

```
[root@maa-82 ~]# ssh centos@10.141.152.15 -i keypair1.pem
```

```
Warning: Permanently added '10.141.152.15' (ECDSA) to the list of known hosts.
```

```
Last login: Tue Jun 11 11:58:09 2019 from 10.141.255.254
```

```
[centos@server3-new ~]$ ll
```

```
total 112640
```

```
-rw-rw-r--. 1 centos centos 115343360 Jun 11 11:57 110m.file
```

```
[centos@server3-new ~]$
```

Unique solution ID: #1485

Author: Frank Furter

Last update: 2019-08-07 16:37