ceph-ansible

Ansible playbooks for Ceph, the distributed filesystem.

Installation

github

You can install directly from the source on github by following these steps:

• Clone the repository:

```
git clone https://github.com/ceph/ceph-ansible.git
```

• Next, you must decide which branch of ceph-ansible you wish to use. There are stable branches to choose from or you could use the master branch:

```
git checkout $branch
```

Ansible on RHEL and CentOS

You can acquire Ansible on RHEL and CentOS by installing from Extras.

On RHEL:

```
subscription-manager repos --enable=rhel-7-server-extras-rpms
```

(CentOS does not use subscription-manager and already has "Extras" enabled by default.)

```
sudo yum install ansible
```

Ansible on Ubuntu

You can acquire Ansible on Ubuntu by using the Ansible PPA.

```
sudo add-apt-repository ppa:ansible/ansible
sudo apt-get update
sudo apt-get install ansible
```

Releases

The following branches should be used depending on your requirements. The stable-* branches have been QE tested and sometimes recieve backport fixes throughout their lifecycle. The master branch should be considered experimental and used with caution.

- stable-2.1 Support for ceph version jewel. This branch supports ansible versions 2.1 and 2.2.1.
- stable-2.2 Support for ceph versions jewel and luminous. This branch supports ansible versions 2.1 and 2.2.2.
- stable-3.0 Support for ceph versions jewel and luminous. This branch supports ansible versions 2.3.1, 2.3.2 and 2.4.2.
- master Support for ceph versions jewel, and luminous. This branch supports ansible version 2.4.2.

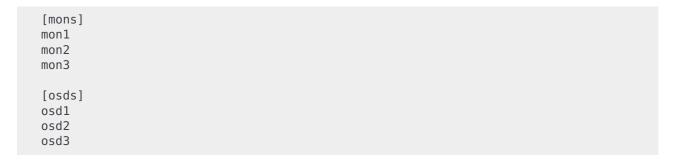
Configuration and Usage

This project assumes you have a basic knowledge of how ansible works and have already prepared your hosts for configuration by ansible.

After you've cloned the ceph-ansible repository, selected your branch and installed ansible then you'll need to create your inventory file, playbook and configuration for your ceph cluster.

Inventory

The ansible inventory file defines the hosts in your cluster and what roles each host plays in your ceph cluster. The default location for an inventory file is /etc/ansible/hosts but this file can be placed anywhere and used with the -i flag of ansible-playbook. An example inventory file would look like:



Note:

For more information on ansible inventories please refer to the ansible documentation: http://docs.ansible.com/ansible/latest/intro_inventory.html

Playbook

You must have a playbook to pass to the ansible-playbook command when deploying your cluster. There is a sample playbook at the root of the ceph-ansible project called site.yml.sample. This playbook should work fine for most usages, but it does include by default every daemon group which might not be appropriate for your cluster setup. Perform the following steps to prepare your playbook:

- Rename the sample playbook: mv site.yml.sample site.yml
- Modify the playbook as necessary for the requirements of your cluster

Note:

It's important the playbook you use is placed at the root of the ceph-ansible project. This is how ansible will be able to find the roles that ceph-ansible provides.

ceph-ansible - choose installation method

Ceph can be installed through several methods.

• Installation methods

ceph-ansible Configuration

The configuration for your ceph cluster will be set by the use of ansible variables that cephansible provides. All of these options and their default values are defined in the group_vars/directory at the root of the ceph-ansible project. Ansible will use configuration in a group_vars/ directory that is relative to your inventory file or your playbook. Inside of the

group_vars/ directory there are many sample ansible configuration files that relate to each of the ceph daemon groups by their filename. For example, the osds.yml.sample contains all the default configuation for the OSD daemons. The all.yml.sample file is a special group_vars file that applies to all hosts in your cluster.

Note:

For more information on setting group or host specific configuration refer to the ansible documentation:

 ${\tt http://docs.ansible.com/ansible/latest/intro_inventory.html \# splitting-out-host-and-group-specific-data}$

At the most basic level you must tell ceph-ansible what version of ceph you wish to install, the method of installation, your clusters network settings and how you want your OSDs configured. To begin your configuration rename each file in group_vars/ you wish to use so that it does not include the .sample at the end of the filename, uncomment the options you wish to change and provide your own value.

An example configuration that deploys the upstream jewel version of ceph with OSDs that have collocated journals would look like this in group_vars/all.yml:

```
ceph_origin: repository
ceph_repository: community
ceph_stable_release: jewel
public_network: "192.168.3.0/24"
cluster_network: "192.168.4.0/24"
monitor_interface: eth1
devices:
    - '/dev/sda'
    - '/dev/sdb'
osd_scenario: collocated
```

The following config options are required to be changed on all installations but there could be other required options depending on your OSD scenario selection or other aspects of your cluster.

- ceph_origin
- ceph stable release
- public network
- osd scenario
- monitor interface or monitor address
- radosgw_interface or radosgw_address

ceph.conf Configuration

The supported method for defining your ceph.conf is to use the <code>ceph_conf_overrides</code> variable. This allows you to specify configuration options using an INI format. This variable can be used to override sections already defined in ceph.conf (see: roles/ceph-common/templates/ceph.conf.j2) or to provide new configuration options. The following sections in ceph.conf are supported: [global], [mon], [osd], [mds] and [rgw].

An example:

```
ceph_conf_overrides:
    global:
       foo: 1234
       bar: 5678
    osd:
       osd_mkfs_type: ext4
```

Note:

We will no longer accept pull requests that modify the ceph.conf template unless it helps the deployment. For simple configuration tweaks please use the ceph_conf_overrides variable.

Full documentation for configuring each of the ceph daemon types are in the following sections.

OSD Configuration

OSD configuration is set by selecting an osd scenario and providing the configuration needed for that scenario. Each scenario is different in it's requirements. Selecting your OSD scenario is done by setting the osd_scenario configuration option.

• OSD Scenarios

Contribution

See the following section for guidelines on how to contribute to ceph-ansible.

• Contribution Guidelines

Testing

Documentation for writing functional testing scenarios for ceph-ansible.

- Testing with ceph-ansible
- Glossary

Demos

Vagrant Demo

Deployment from scratch on bare metal machines: https://youtu.be/E8-96NamLDo

Bare metal demo

Deployment from scratch on bare metal machines: https://youtu.be/dv PEp9qAqq