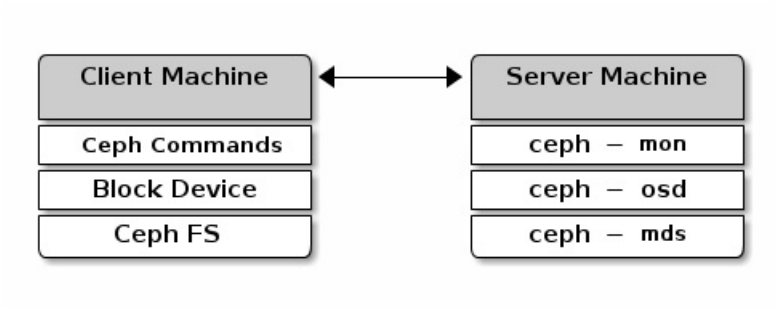
5-MINUTE QUICK START

Thank you for trying Ceph! Petabyte-scale data clusters are quite an undertaking. Before delving deeper into Ceph, we recommend setting up a two-node demo cluster to explore some of the functionality. The Ceph **5-Minute Quick Start** deploys a Ceph object store cluster on one server machine and a Ceph client on a separate machine, each with a recent Debian/Ubuntu operating system. The intent of this **Quick Start** is to help you exercise Ceph object store functionality without the configuration and deployment overhead associated with a production-ready object store cluster. Once you complete this quick start, you may exercise Ceph commands on the command line. You may also proceed to the quick start guides for block devices, CephFS filesystems, and the RESTful gateway.



INSTALL DEBIAN/UBUNTU

Install a recent release of Debian or Ubuntu (e.g., 12.04 precise) on your Ceph server machine and your client machine.

ADD CEPH PACKAGES

To get the latest Ceph packages, add a release key to APT, add a source location to the `/etc/apt/sources.list` on your Ceph server and client machines, update your systems and install Ceph.

```
wget -q -O- 'https://ceph.com/git/?p=ceph.git;a=blob_plain;f=keys/release.asc' | sudo apt-key
echo deb http://ceph.com/debian/ $(lsb_release -sc) main | sudo tee /etc/apt/sources.list.d/c
sudo apt-get update && sudo apt-get install ceph
```

Check the Ceph version you are using and make a note of it so that you have the correct settings in your configuration file:

```
ceph -v
```

If `ceph -v` reflects an earlier version from what you installed, your `ceph-common` library may be using the version distributed with the kernel. Once you've installed Ceph, you may also update and upgrade your packages to ensure you have the latest `ceph-common` library installed.

```
sudo apt-get update && sudo apt-get upgrade
```

If you want to use a version other than the current release, see Installing Debian/Ubuntu Packages for further details.

ADD A CONFIGURATION FILE

The example configuration file will configure Ceph to operate a monitor, two OSD daemons and one metadata server on your Ceph server machine. To add a configuration file to Ceph, we suggest copying the contents of the example file below to an editor. Then, follow the steps below to modify it.

```
[global]

        # For version 0.55 and beyond, you must explicitly enable
        # or disable authentication with "auth" entries in [global].
```

```
        auth cluster required = cephx
        auth service required = cephx
        auth client required = cephx

[osd]
        osd journal size = 1000

        #The following assumes ext4 filesystem.
        filestore xattr use omap = true


        # For Bobtail (v 0.56) and subsequent versions, you may
        # add settings for mkcephfs so that it will create and mount
        # the file system on a particular OSD for you. Remove the comment `#`
        # character for the following settings and replace the values
        # in braces with appropriate values, or leave the following settings
        # commented out to accept the default values. You must specify the
        # --mkfs option with mkcephfs in order for the deployment script to
        # utilize the following settings, and you must define the 'devs'
        # option for each osd instance; see below.

        #osd mkfs type = {fs-type}
        #osd mkfs options {fs-type} = {mkfs options}   # default for xfs is "-f"
        #osd mount options {fs-type} = {mount options} # default mount option is "rw,noatime"

        # For example, for ext4, the mount option might look like this:

        #osd mkfs options ext4 = user_xattr,rw,noatime

        # Execute $ hostname to retrieve the name of your host,
        # and replace {hostname} with the name of your host.
        # For the monitor, replace {ip-address} with the IP
        # address of your host.

[mon.a]

        host = {hostname}
        mon addr = {ip-address}:6789

[osd.0]
        host = {hostname}

        # For Bobtail (v 0.56) and subsequent versions, you may
        # add settings for mkcephfs so that it will create and mount
        # the file system on a particular OSD for you. Remove the comment `#`
        # character for the following setting for each OSD and specify
        # a path to the device if you use mkcephfs with the --mkfs option.

        #devs = {path-to-device}

[osd.1]
        host = {hostname}
        #devs = {path-to-device}

[mds.a]
        host = {hostname}
```

1. Open a command line on your Ceph server machine and execute `hostname -s` to retrieve the name of your Ceph server machine.
2. Replace `{hostname}` in the sample configuration file with your host name.
3. Execute `ifconfig` on the command line of your Ceph server machine to retrieve the IP address of your Ceph server machine.
4. Replace `{ip-address}` in the sample configuration file with the IP address of your Ceph server host.
5. Save the contents to `/etc/ceph/ceph.conf` on Ceph server host.
6. Copy the configuration file to `/etc/ceph/ceph.conf` on your client host.

```
sudo scp {user}@{server-machine}:/etc/ceph/ceph.conf /etc/ceph/ceph.conf
```

Tip: Ensure the `ceph.conf` file has appropriate permissions set (e.g. `chmod 644`) on your client machine.

New in version 0.55.

Ceph v0.55 and above have authentication enabled by default. You should explicitly enable or disable authentication with version 0.55 and above. The example configuration provides `auth` entries for authentication. For details on Ceph authentication see Cephx Configuration Reference and Cephx Guide.

DEPLOY THE CONFIGURATION

You must perform the following steps to deploy the configuration.

1. On your Ceph server host, create a directory for each daemon. For the example configuration, execute the following:

```
sudo mkdir -p /var/lib/ceph/osd/ceph-0
sudo mkdir -p /var/lib/ceph/osd/ceph-1
sudo mkdir -p /var/lib/ceph/mon/ceph-a
sudo mkdir -p /var/lib/ceph/mds/ceph-a
```

2. Execute the following on the Ceph server host:

```
cd /etc/ceph
sudo mkcephfs -a -c /etc/ceph/ceph.conf -k ceph.keyring
```

Among other things, `mkcephfs` will deploy Ceph and generate a `client.admin` user and key. For Bobtail and subsequent versions (v 0.56 and after), the `mkcephfs` script will create and mount the filesystem for you provided you specify `osd mkfs osd mount` and `devs` settings in your Ceph configuration file.

START CEPH

Once you have deployed the configuration, start Ceph from the command line of your server machine.

```
sudo service ceph -a start
```

Check the health of your Ceph cluster to ensure it is ready.

```
sudo ceph health
```

When your cluster echoes back `HEALTH_OK`, you may begin using Ceph.

COPY THE KEYRING TO THE CLIENT

The next step you must perform is to copy `/etc/ceph/ceph.keyring`, which contains the `client.admin` key, from the server machine to the client machine. If you don't perform this step, you will not be able to use the Ceph command line, as the example Ceph configuration requires authentication.

```
sudo scp {user}@{server-machine}:/etc/ceph/ceph.keyring /etc/ceph/ceph.keyring
```

Tip: Ensure the `ceph.keyring` file has appropriate permissions set (e.g., `chmod 644`) on your client machine.

PROCEED TO OTHER QUICK STARTS

Once you have Ceph running with both a client and a server, you may proceed to the other Quick Start guides.

1. For Ceph block devices, proceed to Block Device Quick Start.

2. For the CephFS filesystem, proceed to CephFS Quick Start.
3. For the RESTful Gateway, proceed to Gateway Quick Start.