

## rbd - Bug #18938

### Unable to build 11.2.0 under i686

02/15/2017 12:56 AM - Sebastien Luttringer

<b>Status:</b>	Won't Fix	<b>Start date:</b>	02/15/2017
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Kefu Chai	<b>% Done:</b>	0%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>		<b>Spent time:</b>	0.00 hour
<b>Source:</b>		<b>Severity:</b>	3 - minor
<b>Tags:</b>		<b>Reviewed:</b>	
<b>Backport:</b>		<b>Affected Versions:</b>	v11.2.1
<b>Regression:</b>	No	<b>ceph-qa-suite:</b>	

#### Description

Hello,

The ceph 11.2.0 tarball fail to build under i686 architecture when it succeeds under x86\_64.

Here is my build commands, run from an i686 Arch Linux.

```
mkdir build
cd build
cmake \
  -DCMAKE_INSTALL_PREFIX=/usr \
  -DCMAKE_INSTALL_SYSCONFDIR=/etc \
  -DCMAKE_INSTALL_SBINDIR=/usr/bin \
  -DCMAKE_INSTALL_LIBDIR=/usr/lib \
  -DCMAKE_INSTALL_LIBEXECDIR=/usr/lib \
  -DSPHINX_BUILD=/usr/bin/sphinx-build2 \
  -DWITH_SYSTEM_BOOST=ON \
  -DWITH_SYSTEMD=ON \
  -DWITH_EMBEDDED=OFF \
  -DWITH_OPENLDAP=OFF \
  -DWITH_LTTNG=OFF \
  -DHAVE_BABELTRACE=OFF \
  -DWITH_TESTS=OFF \
  ..
make
```

Here is the make output.

```
[ 1%] Building CXX object src/CMakeFiles/common.dir/crush/CrushWrapper.cc.o
In file included from /build/ceph/src/ceph-11.2.0/src/include/encoding.h:25:0,
                 from /build/ceph/src/ceph-11.2.0/src/include/uuid.h:8,
                 from /build/ceph/src/ceph-11.2.0/src/include/types.h:21,
                 from /build/ceph/src/ceph-11.2.0/src/msg/msg_types.h:21,
                 from /build/ceph/src/ceph-11.2.0/src/osd/osd_types.h:31,
                 from /build/ceph/src/ceph-11.2.0/src/crush/CrushWrapper.cc:4:
/build/ceph/src/ceph-11.2.0/src/include/denc.h: In instantiation of 'typename std::enable_if<((traits:: supported == 1) && (! traits:: featured))>::type decode_nohead(size_t, T&, ceph::buffer::list::iterator&) [with T = std::__cxx11::basic_string<char>; traits = denc_traits<std::__cxx11::basic_string<char> >; typename std::enable_if<((traits:: supported == 1) && (! traits:: featured))>::type = void; size_t = unsigned int]':
/build/ceph/src/ceph-11.2.0/src/crush/CrushWrapper.cc:1239:40:   required from here
```

```

/build/ceph/src/ceph-11.2.0/src/include/denc.h:1337:24: error: 'decode_nohead' is not a member of
'denc_traits<std::__cxx11::basic_string<char> >'
    traits::decode_nohead(num, o, cp);
    ~~~~~^~~~~~
make[2]: *** [src/CMakeFiles/common.dir/build.make:520: src/CMakeFiles/common.dir/crush/CrushWrapp
er.cc.o] Error 1
make[1]: *** [CMakeFiles/Makefile2:449: src/CMakeFiles/common.dir/all] Error 2
make: *** [Makefile:139: all] Error 2

```

## History

### #1 - 03/01/2017 07:31 PM - Romain Gobinet

Hello,

I almost have the same problem but on an ARM platform.

```

dpkg-buildpackage -j8
[...]
[ 3%] Building CXX object src/cls/CMakeFiles/cls_rgw_client.dir/rgw/cls_rgw_types.cc.o
/usr/bin/ranlib ../../lib/libcls_statelog_client.a
cd /mnt/sdal/ceph-build/ceph/obj-arm-linux-gnueabi/src/cls && /usr/bin/arm-linux-gnueabi-g++ -DCEPH_LIBD
IR="/usr/lib" -DCEPH_PKGLIBDIR="/usr/lib/ceph" -D__linux__ -isystem /mnt/sdal/ceph-build/ceph/obj-arm-linu
x-gnueabi/boost/include -I/mnt/sdal/ceph-build/ceph/obj-arm-linux-gnueabi/src/include -I/mnt/sdal/ceph-bui
ld/ceph/src -isystem /mnt/sdal/ceph-build/ceph/obj-arm-linux-gnueabi/include -I/mnt/sdal/ceph-build/ceph/src
/xxHash -g -O2 -fstack-protector-strong -Wformat -Werror=format-security -Wdate-time -D_FORTIFY_SOURCE=2 -Wa
ll -Wtype-limits -Wignored-qualifiers -Winit-self -Wpointer-arith -Werror=format-security -fno-strict-aliasing
-fsigned-char -rdynamic -Wno-unknown-pragmas -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -Wp,-U_FORTIFY_SOURCE,
-D_FORTIFY_SOURCE=2 -fstack-protector-strong -fdiagnostics-color=auto -I/usr/include/nss -I/usr/include/nspr -
fPIC -DHAVE_CONFIG_H -D__CEPH__ -D_REENTRANT -D_THREAD_SAFE -D_STDC_FORMAT_MACROS -D_GNU_SOURCE -D_FILE_OFF
SET_BITS=64 -std=c++11 -o CMakeFiles/cls_rgw_client.dir/rgw/cls_rgw_types.cc.o -c /mnt/sdal/ceph-build/ceph/sr
c/cls/rgw/cls_rgw_types.cc
make[4]: Leaving directory '/mnt/sdal/ceph-build/ceph/obj-arm-linux-gnueabi'
In file included from /mnt/sdal/ceph-build/ceph/src/include/encoding.h:25:0,
    from /mnt/sdal/ceph-build/ceph/src/include/uuid.h:8,
    from /mnt/sdal/ceph-build/ceph/src/include/types.h:21,
    from /mnt/sdal/ceph-build/ceph/src/msg/Message.h:26,
    from /mnt/sdal/ceph-build/ceph/src/msg/Messenger.h:23,
    from /mnt/sdal/ceph-build/ceph/src/osdc/ObjectCacher.cc:6:
/mnt/sdal/ceph-build/ceph/src/include/denc.h: In instantiation of 'typename std::enable_if<((traits:: supporte
d == 1) && (! traits:: featured))>::type decode_nohead(size_t, T&, ceph::buffer::list::iterator&) [with T = st
d::__cxx11::basic_string<char>; traits = denc_traits<std::__cxx11::basic_string<char> >; typename std::enable_
if<((traits:: supported == 1) && (! traits:: featured))>::type = void; size_t = unsigned int]':
/mnt/sdal/ceph-build/ceph/src/messages/MOSDOp.h:397:41: required from here
/mnt/sdal/ceph-build/ceph/src/include/denc.h:1337:24: error: 'decode_nohead' is not a member of 'denc_traits<s
td::__cxx11::basic_string<char> >'
    traits::decode_nohead(num, o, cp);
    ^
[...]
[ 3%] Linking CXX static library ../../lib/libcls_rgw_client.a
cd /mnt/sdal/ceph-build/ceph/obj-arm-linux-gnueabi/src/cls && /usr/bin/cmake -P CMakeFiles/cls_rgw_client.di
r/cmake_clean_target.cmake
cd /mnt/sdal/ceph-build/ceph/obj-arm-linux-gnueabi/src/cls && /usr/bin/cmake -E cmake_link_script CMakeFiles
/cls_rgw_client.dir/link.txt --verbose=1
/usr/bin/ar qc ../../lib/libcls_rgw_client.a CMakeFiles/cls_rgw_client.dir/rgw/cls_rgw_client.cc.o CMakeFiles
/cls_rgw_client.dir/rgw/cls_rgw_types.cc.o CMakeFiles/cls_rgw_client.dir/rgw/cls_rgw_ops.cc.o
/usr/bin/ranlib ../../lib/libcls_rgw_client.a
make[4]: Leaving directory '/mnt/sdal/ceph-build/ceph/obj-arm-linux-gnueabi'
[ 3%] Built target cls_rgw_client
make[3]: Leaving directory '/mnt/sdal/ceph-build/ceph/obj-arm-linux-gnueabi'
Makefile:141: recipe for target 'all' failed
make[2]: *** [all] Error 2
make[2]: Leaving directory '/mnt/sdal/ceph-build/ceph/obj-arm-linux-gnueabi'
cd /mnt/sdal/ceph-build/ceph
dh_auto_build: make -j8 returned exit code 2
debian/rules:29: recipe for target 'override_dh_auto_build' failed
make[1]: *** [override_dh_auto_build] Error 2
make[1]: Leaving directory '/mnt/sdal/ceph-build/ceph'
debian/rules:22: recipe for target 'build' failed
make: *** [build] Error 2
dpkg-buildpackage: error: debian/rules build gave error exit status 2

```

Romain

**#2 - 03/20/2017 09:43 AM - Kefu Chai**

Sebastien and Romain, have you tried with the latest master? the denc part of the source have change a considerably since then.

**#3 - 03/20/2017 05:57 PM - Romain Gobinet**

Hello Kefu,

Just to be accurate, here are some details :

- arch: armv7l
- bitness: 32bits

I failed to compile with this :

```
git branch -v
* kraken 98a87fa Merge pull request #13501 from shinobu-x/wip-18371-kraken
```

And with this too:

[https://download.ceph.com/tarballs/ceph\\_11.2.0.orig.tar.gz](https://download.ceph.com/tarballs/ceph_11.2.0.orig.tar.gz)

Everytime it is related with "denc" part.

In my case i want to compile Kraken because i can't find any version of Ceph for ARM 32bits, only Jewel and arm64.

I will try with the "master" branch, just in case, but i think that the "denc" refactoring appends before the actual state of the branch "kraken".

Romain

**#4 - 03/20/2017 07:07 PM - Romain Gobinet**

With the "master" branch (wich compile Luminous and not Kraken by the way) i ended with the same error :

```

[ 4%] Building CXX object src/global/CMakeFiles/libglobal_objs.dir/signal_handler.cc.o
cd /mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabihf/src/global && /usr/bin/arm-linux-gnueabihf-g++ -
DCEPH_LIBDIR="/usr/lib" -DCEPH_PKGLIBDIR="/usr/lib/ceph" -D__linux__ -isystem /mnt/sdal/ceph-build/ceph-ma
ster/obj-arm-linux-gnueabihf/boost/include -I/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabihf/src/incl
ude -I/mnt/sdal/ceph-build/ceph-master/src -isystem /mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabihf/i
nclude -I/mnt/sdal/ceph-build/ceph-master/src/xxHash -g -O2 -fstack-protector-strong -Wformat -Werror=format-
security -Wdate-time -D_FORTIFY_SOURCE=2 -Wall -Wtype-limits -Wignored-qualifiers -Winit-self -Wpointer-arith
-Werror=format-security -fno-strict-aliasing -fsigned-char -rdynamic -Wno-unknown-pragmas -Wp,-U_FORTIFY_SOUR
CE,-D_FORTIFY_SOURCE=2 -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -fstack-protector-strong -fdiagnostics-color=
auto -I/usr/include/nss -I/usr/include/nspr -I/usr/include -fPIC -DHAVE_CONFIG_H -D__CEPH__ -D_REENTRANT -D_
THREAD_SAFE -D__STDC_FORMAT_MACROS -D_GNU_SOURCE -D_FILE_OFFSET_BITS=64 -std=c++11 -o CMakeFiles/libglobal_obj
s.dir/signal_handler.cc.o -c /mnt/sdal/ceph-build/ceph-master/src/global/signal_handler.cc
-- Performing Test WARNING_UNDEF_ALLOWED - Success
Compiler flag -Wundef allowed
-- Performing Test WARNING_SHADOW_ALLOWED
-- Performing Test WARNING_SHADOW_ALLOWED - Success
Compiler flag -Wshadow allowed
-- Performing Test WARNING_CAST_ALIGN_ALLOWED
In file included from /mnt/sdal/ceph-build/ceph-master/src/include/encoding.h:25:0,
                 from /mnt/sdal/ceph-build/ceph-master/src/include/uuid.h:8,
                 from /mnt/sdal/ceph-build/ceph-master/src/include/types.h:21,
                 from /mnt/sdal/ceph-build/ceph-master/src/msg/msg_types.h:21,
                 from /mnt/sdal/ceph-build/ceph-master/src/osd/osd_types.h:31,
                 from /mnt/sdal/ceph-build/ceph-master/src/crush/CrushWrapper.cc:4:
/mnt/sdal/ceph-build/ceph-master/src/include/denc.h: In instantiation of 'typename std::enable_if<(traits:: su
pported && (! traits:: featured))>::type decode_nohead(size_t, T&, ceph::buffer::list::iterator&) [with T = st
d::__cxx11::basic_string<char>; traits = denc_traits<std::__cxx11::basic_string<char>, void>; typename std::en
able_if<(traits:: supported && (! traits:: featured))>::type = void; size_t = unsigned int]':
/mnt/sdal/ceph-build/ceph-master/src/crush/CrushWrapper.cc:1410:40:   required from here
/mnt/sdal/ceph-build/ceph-master/src/include/denc.h:1385:24: error: 'decode_nohead' is not a member of 'denc_t
raits<std::__cxx11::basic_string<char>, void>'
    traits::decode_nohead(num, o, cp);

```

So i think there is a compiling issue on armhf/armv7l whether for Kraken or Luminous.

Romain

**#5 - 03/23/2017 01:59 AM - Sebastien Luttringer**

I have tried with the 12.0.0 release (not the latest master) with the same error.

The issue seems to be triggered by the call of `decode_nohead` function in `CrushWrapper.cc`. The git blame of the line give a commit back to 2012.

Sage Weil, is the developer who committed the `decode_nohead` function in `denc.h` and also in previous definition in `encoding_btrees.h` in 10.2.x. Maybe he could help to understand what's happening if he's around.

**#6 - 03/23/2017 07:55 AM - Kefu Chai**

could you give <https://github.com/ceph/ceph/pull/14099> a try?

**#7 - 03/23/2017 11:10 AM - Romain Gobinet**

```
[ 4%] Building CXX object src/CMakeFiles/crush.dir/crush/CrushWrapper.cc.o
cd /mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/src && /usr/bin/arm-linux-gnueabi-g++ -DCEPH_LIBDIR="/usr/lib" -DCEPH_PKGLIBDIR="/usr/lib/ceph" -D__linux__ -isystem /mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/boost/include -I/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/src/include -I/mnt/sdal/ceph-build/ceph-master/src -isystem /mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/include -I/mnt/sdal/ceph-build/ceph-master/src/xxHash -g -O2 -fstack-protector-strong -Wformat -Werror=format-security -Wdate-time -D_FORTIFY_SOURCE=2 -Wall -Wtype-limits -Wignored-qualifiers -Winit-self -Wpointer-arith -Werror=format-security -fno-strict-aliasing -fsigned-char -rdynamic -Wno-unknown-pragmas -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -fstack-protector-strong -fdiagnostics-color=auto -I/usr/include/nss -I/usr/include/nspr -I/usr/include -fPIC -DHAVE_CONFIG_H -D__CEPH__ -D_REENTRANT -D_THREAD_SAFE -D__STDC_FORMAT_MACROS -D_GNU_SOURCE -D_FILE_OFFSET_BITS=64 -std=c++11 -o CMakeFiles/crush.dir/crush/CrushWrapper.cc.o -c /mnt/sdal/ceph-build/ceph-master/src/crush/CrushWrapper.cc
[...]
arm-linux-gnueabi-g++: internal compiler error: Killed (program cclplus)
Please submit a full bug report,
with preprocessed source if appropriate.
See <file:///usr/share/doc/gcc-5/README.Bugs> for instructions.
src/CMakeFiles/crush.dir/build.make:161: recipe for target 'src/CMakeFiles/crush.dir/crush/CrushWrapper.cc.o' failed
make[4]: *** [src/CMakeFiles/crush.dir/crush/CrushWrapper.cc.o] Error 4
```

The pull request 14099 doesn't solve the issue. (I try with the master branch)

**#8 - 03/23/2017 02:00 PM - Romain Gobinet**

Anyway, depending on the compilations ("dpkg-buildpackage -j8" or "dpkg-buildpackage") we reach different errors linked with encoding and "decode\_nohead". And not only in CrushWrapper.cc.

```
[ 4%] Building CXX object src/CMakeFiles/common-objs.dir/msg/Message.cc.o
cd /mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabihf/src && /usr/bin/arm-linux-gnueabihf-g++ -DCEPH_LIBDIR="/usr/lib/" -DCEPH_PKGLIBDIR="/usr/lib/ceph/" -D__linux__ -isystem /mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabihf/boost/include -I/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabihf/src/include -I/mnt/sdal/ceph-build/ceph-master/src -isystem /mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabihf/include -I/mnt/sdal/ceph-build/ceph-master/src/xxHash -g -O2 -fstack-protector-strong -Wformat -Werror=format-security -Wdate-time -D_FORTIFY_SOURCE=2 -Wall -Wtype-limits -Wignored-qualifiers -Winit-self -Wpointer-arith -Werror=format-security -fno-strict-aliasing -fsigned-char -rdynamic -Wno-unknown-pragmas -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -fstack-protector-strong -fdiagnostics-color=auto -I/usr/include/nss -I/usr/include/nspr -I/usr/include -fPIC -DHAVE_CONFIG_H -D__CEPH__ -D_REENTRANT -D_THREAD_SAFE -D__STDC_FORMAT_MACROS -D_GNU_SOURCE -D_FILE_OFFSET_BITS=64 -std=c++11 -o CMakeFiles/common-objs.dir/msg/Message.cc.o -c /mnt/sdal/ceph-build/ceph-master/src/msg/Message.cc
In file included from /mnt/sdal/ceph-build/ceph-master/src/include/encoding.h:25:0,
                 from /mnt/sdal/ceph-build/ceph-master/src/include/uuid.h:8,
                 from /mnt/sdal/ceph-build/ceph-master/src/include/types.h:21,
                 from /mnt/sdal/ceph-build/ceph-master/src/msg/Message.cc:12:
/mnt/sdal/ceph-build/ceph-master/src/include/denc.h: In instantiation of 'typename std::enable_if<(traits:: supported && (! traits:: featured))>::type decode_nohead(size_t, T&, ceph::buffer::list::iterator&) [with T = std::__cxx11::basic_string<char>; traits = denc_traits<std::__cxx11::basic_string<char>, void>; typename std::enable_if<(traits:: supported && (! traits:: featured))>::type = void; size_t = unsigned int]':
/mnt/sdal/ceph-build/ceph-master/src/messages/MOSDOp.h:435:46:   required from here
/mnt/sdal/ceph-build/ceph-master/src/include/denc.h:1385:24: error: 'decode_nohead' is not a member of 'denc_traits<std::__cxx11::basic_string<char>, void>'
    traits::decode_nohead(num, o, cp);
            ^
/mnt/sdal/ceph-build/ceph-master/src/include/denc.h: In instantiation of 'typename std::enable_if<(traits:: supported && (! traits:: featured))>::type decode_nohead(size_t, T&, ceph::buffer::list::iterator&) [with T = ceph::buffer::list; traits = denc_traits<ceph::buffer::list>; typename std::enable_if<(traits:: supported && (! traits:: featured))>::type = void; size_t = unsigned int]':
/mnt/sdal/ceph-build/ceph-master/src/messages/MClientCaps.h:240:51:   required from here
/mnt/sdal/ceph-build/ceph-master/src/include/denc.h:1385:24: error: 'decode_nohead' is not a member of 'denc_traits<ceph::buffer::list>'
src/CMakeFiles/common-objs.dir/build.make:1530: recipe for target 'src/CMakeFiles/common-objs.dir/msg/Message.cc.o' failed
make[4]: *** [src/CMakeFiles/common-objs.dir/msg/Message.cc.o] Error 1
```

**#9 - 03/24/2017 06:37 AM - Kefu Chai**

Romain,

arm-linux-gnueabi-hf-g++: internal compiler error: Killed (program cc1plus)

hmm, this is an issue of GCC. but i updated <https://github.com/ceph/ceph/pull/14099> to address [#18938-8](#)

could you give it another shot? thanks!

**#10 - 03/24/2017 06:38 AM - Kefu Chai**

- Status changed from New to Need Review

- Assignee set to Kefu Chai

**#11 - 03/24/2017 11:32 AM - Romain Gobinet**

Sorry, it doesn't work :

```
[ 4%] Building CXX object src/CMakeFiles/common-objs.dir/msg/Message.cc.o
cd /mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi-hf-g++ && /usr/bin/arm-linux-gnueabi-hf-g++ -DCEPH_L
IBDIR="/usr/lib/" -DCEPH_PKGLIBDIR="/usr/lib/ceph/" -D__linux__ -isystem /mnt/sdal/ceph-build/ceph-master/ob
j-arm-linux-gnueabi-hf-g++/boost/include -I/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi-hf-g++/src/include -I/
mnt/sdal/ceph-build/ceph-master/src -isystem /mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi-hf-g++/include
-I/mnt/sdal/ceph-build/ceph-master/src/xxHash -g -O2 -fstack-protector-strong -Wformat -Werror=format-security
-Wdate-time -D_FORTIFY_SOURCE=2 -Wall -Wtype-limits -Wignored-qualifiers -Winit-self -Wpointer-arith -Werro
r=format-security -fno-strict-aliasing -fsigned-char -rdynamic -Wno-unknown-pragmas -Wp,-U_FORTIFY_SOURCE,-D_F
ORTIFY_SOURCE=2 -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -fstack-protector-strong -fdiagnostics-color=auto -I
/usr/include/nss -I/usr/include/nspr -I/usr/include -fPIC -DHAVE_CONFIG_H -D__CEPH__ -D_REENTRANT -D_THREAD_
SAFE -D__STDC_FORMAT_MACROS -D_GNU_SOURCE -D_FILE_OFFSET_BITS=64 -std=c++11 -o CMakeFiles/common-objs.dir/msg/
Message.cc.o -c /mnt/sdal/ceph-build/ceph-master/src/msg/Message.cc
In file included from /mnt/sdal/ceph-build/ceph-master/src/include/encoding.h:25:0,
      from /mnt/sdal/ceph-build/ceph-master/src/include/uuid.h:8,
      from /mnt/sdal/ceph-build/ceph-master/src/include/types.h:21,
      from /mnt/sdal/ceph-build/ceph-master/src/msg/Message.cc:12:
/mnt/sdal/ceph-build/ceph-master/src/include/denc.h: In instantiation of 'typename std::enable_if<(traits:: su
pported && (! traits:: featured))>::type decode_nohead(size_t, T&, ceph::buffer::list::iterator&) [with T = ce
ph::buffer::list; traits = denc_traits<ceph::buffer::list>; typename std::enable_if<(traits:: supported && (!
traits:: featured))>::type = void; size_t = unsigned int]':
/mnt/sdal/ceph-build/ceph-master/src/messages/MClientCaps.h:240:51:   required from here
/mnt/sdal/ceph-build/ceph-master/src/include/denc.h:1396:24: error: 'decode_nohead' is not a member of 'denc_t
raits<ceph::buffer::list>'
      traits::decode_nohead(num, o, cp);
              ^
src/CMakeFiles/common-objs.dir/build.make:1530: recipe for target 'src/CMakeFiles/common-objs.dir/msg/Message.
cc.o' failed
```

**#12 - 03/24/2017 11:22 PM - Sebastien Luttringer**

Hi, is it possible to get a patch for the 11.2.0?

**#13 - 03/25/2017 04:08 AM - Kefu Chai**

Sorry, it doesn't work :

no, it does not. but if we look at the error messages closer. we have progress! i updated <https://github.com/ceph/ceph/pull/14099> to address the new errors.

Romain, could you try it again? thanks!

Hi, is it possible to get a patch for the 11.2.0?

it's possible and we are working on it.

**#14 - 03/25/2017 12:16 PM - Romain Gobinet**

It seems good for the "encoding" issues ! But ...

```
Scanning dependencies of target build_version
make[8]: Leaving directory '/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/hf/src/rocksdb'
make[8]: Entering directory '/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/hf/src/rocksdb'
[ 0%] Building CXX object CMakeFiles/build_version.dir/build_version.cc.o
arm-linux-gnueabi-g++: error: unrecognized command line option '-momit-leaf-frame-pointer'
CMakeFiles/build_version.dir/build.make:62: recipe for target 'CMakeFiles/build_version.dir/build_version.cc.o' failed
make[8]: *** [CMakeFiles/build_version.dir/build_version.cc.o] Error 1
make[8]: Leaving directory '/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/hf/src/rocksdb'
CMakeFiles/Makefile2:1818: recipe for target 'CMakeFiles/build_version.dir/all' failed
make[7]: *** [CMakeFiles/build_version.dir/all] Error 2
make[7]: Leaving directory '/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/hf/src/rocksdb'
CMakeFiles/Makefile2:2424: recipe for target 'CMakeFiles/rocksdb.dir/rule' failed
make[6]: *** [CMakeFiles/rocksdb.dir/rule] Error 2
make[6]: Leaving directory '/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/hf/src/rocksdb'
Makefile:896: recipe for target 'rocksdb' failed
make[5]: *** [rocksdb] Error 2
make[5]: Leaving directory '/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/hf/src/rocksdb'
src/CMakeFiles/rocksdb_ext.dir/build.make:115: recipe for target 'src/rocksdb_ext-prefix/src/rocksdb_ext-stamp/rocksdb_ext-build' failed
make[4]: *** [src/rocksdb_ext-prefix/src/rocksdb_ext-stamp/rocksdb_ext-build] Error 2
make[4]: Leaving directory '/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/hf'
CMakeFiles/Makefile2:1544: recipe for target 'src/CMakeFiles/rocksdb_ext.dir/all' failed
make[3]: *** [src/CMakeFiles/rocksdb_ext.dir/all] Error 2
make[3]: Leaving directory '/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/hf'
Makefile:141: recipe for target 'all' failed
make[2]: *** [all] Error 2
make[2]: Leaving directory '/mnt/sdal/ceph-build/ceph-master/obj-arm-linux-gnueabi/hf'
```



```
cd /mnt/sda1/ceph-build/ceph-master
dh_auto_build: make -j1 returned exit code 2
debian/rules:29: recipe for target 'override_dh_auto_build' failed
make[1]: *** [override_dh_auto_build] Error 2
make[1]: Leaving directory '/mnt/sda1/ceph-build/ceph-master'
debian/rules:22: recipe for target 'build' failed
make: *** [build] Error 2
dpkg-buildpackage: error: debian/rules build gave error exit status 2
```

Another GCC issue probably :(

#### #15 - 03/25/2017 03:39 PM - Kefu Chai

```
arm-linux-gnueabihf-g++: error: unrecognized command line option '-momit-leaf-frame-pointer'
```

not it's not, this option is not supported on all architectures, let me fix it. hold on!

#### #16 - 03/25/2017 03:48 PM - Kefu Chai

Romain, have you updated the rocksdb submodule?  
could you post the output of following command?

```
cd src/rocksdb
git describe
```

in my source tree, it's

```
$ git describe
v4.9-728-g3b4ac807
```

and could you run this command under your ceph source tree?

```
git submodule update --init --recursive --force
```

it will sync up the submodules.

because we do check the availability of "-momit-leaf-frame-pointer" before using it.

**#17 - 03/25/2017 07:04 PM - Romain Gobinet**

It's a little bit weird :

```
# cd src/rocksdb/  
# git describe  
2.7.fb-4804-g3b4ac80  
# cd -  
# git submodule update --init --recursive --force  
[...]  
Submodule path 'src/rocksdb': checked out '3b4ac8076bff9fd6a8b4ccbc37a1995d08981840'  
[...]  
# cd src/rocksdb  
# git describe  
2.7.fb-4804-g3b4ac80
```

I've already synced the submodules when i switched from "kraken" to "master" branch. (since #2 you asked me to test with "master")

```
# git describe  
v12.0.0-1660-g72097c7  
# git branch -v  
  kraken 98a87fa Merge pull request #13501 from shinobu-x/wip-18371-kraken  
* master 72097c7 Merge pull request #14004 from liewegas/wip-osd-full-failsafe
```

**#18 - 03/26/2017 10:23 AM - Kefu Chai**

if the rocksdb is at 3b4ac8076bff9fd6a8b4ccbc37a1995d08981840, then we are good. could you try again after you ran "git submodule update --init --recursive --force"?

if it does not work, could you nuke your build directory and try again? i believe the commit of rocksdb referenced by ceph's master does contain <https://github.com/facebook/rocksdb/commit/4e35ffdfab1c86487cdad33d8eebf29ee3ceee04>, which addresses the issue you run into.

**#19 - 03/26/2017 10:27 AM - gyorgy kiss**

Hi,

I'm happy that found this bug thread :) not I'm the only crazy to try build on arm.

\$ git branch -v

- kraken 98a87fa Merge pull request [#13501](#) from shinobu-x/wip-18371-kraken  
\$ git describe

```
v11.2.0-67-g98a87fa
/src/rocksdb $ git describe
2.7.fb-4607-ga0deec9
```

But I have a little different error message on end:

I gave a ./run-make-check.sh from copied git. This is a correct way?

```
[ 4%] Building CXX object src/librados/CMakeFiles/librados_objs.dir/loCtxImpl.cc.o
In file included from /home/pi/ceph_kraken/ceph/src/include/encoding.h:25:0,
from /home/pi/ceph_kraken/ceph/src/include/uuid.h:8,
from /home/pi/ceph_kraken/ceph/src/include/types.h:21,
from /home/pi/ceph_kraken/ceph/src/msg/Message.h:26,
from /home/pi/ceph_kraken/ceph/src/msg/Messenger.h:23,
from /home/pi/ceph_kraken/ceph/src/osdc/ObjectCacher.cc:6:
/home/pi/ceph_kraken/ceph/src/include/denc.h: In instantiation of 'typename std::enable_if<((traits:: supported 1) && (! traits:: featured))>::type
decode_nohead(size_t, T&, ceph::buffer::list::iterator&) [with T = std::basic_string<char>; traits = denc_traits<std::basic_string<char>; >;
typename std::enable_if<((traits:: supported 1) && (! traits:: featured))>::type = void; size_t = unsigned int]':
/home/pi/ceph_kraken/ceph/src/messages/MOSDOp.h:397:41: required from here
/home/pi/ceph_kraken/ceph/src/include/denc.h:1337:35: error: 'decode_nohead' is not a member of 'denc_traits<std::basic_string<char> >'
traits::decode_nohead(num, o, cp);
^
In file included from /home/pi/ceph_kraken/ceph/src/include/encoding.h:25:0,
from /home/pi/ceph_kraken/ceph/src/common/entity_name.h:22,
from /home/pi/ceph_kraken/ceph/src/common/config.h:26,
from /home/pi/ceph_kraken/ceph/src/common/dout.h:20,
from /home/pi/ceph_kraken/ceph/src/include/Context.h:19,
from /home/pi/ceph_kraken/ceph/src/common/Cond.h:22,
from /home/pi/ceph_kraken/ceph/src/librados/loCtxImpl.h:18,
from /home/pi/ceph_kraken/ceph/src/librados/loCtxImpl.cc:17:
/home/pi/ceph_kraken/ceph/src/include/denc.h: In instantiation of 'typename std::enable_if<((traits:: supported 1) && (! traits:: featured))>::type
decode_nohead(size_t, T&, ceph::buffer::list::iterator&) [with T = std::basic_string<char>; traits = denc_traits<std::basic_string<char>; >;
typename std::enable_if<((traits:: supported 1) && (! traits:: featured))>::type = void; size_t = unsigned int]':
/home/pi/ceph_kraken/ceph/src/messages/MOSDOp.h:397:41: required from here
/home/pi/ceph_kraken/ceph/src/include/denc.h:1337:35: error: 'decode_nohead' is not a member of 'denc_traits<std::basic_string<char> >'
traits::decode_nohead(num, o, cp);
^
src/osdc/CMakeFiles/osdc_rbd_objs.dir/build.make:62: recipe for target 'src/osdc/CMakeFiles/osdc_rbd_objs.dir/ObjectCacher.cc.o' failed
make3: * [src/osdc/CMakeFiles/osdc_rbd_objs.dir/ObjectCacher.cc.o] Error 1
CMakeFiles/Makefile2:3471: recipe for target 'src/osdc/CMakeFiles/osdc_rbd_objs.dir/all' failed
make2: [src/osdc/CMakeFiles/osdc_rbd_objs.dir/all] Error 2
make2: Waiting for unfinished jobs....
[ 4%] Building CXX object src/librados/CMakeFiles/librados_objs.dir/RadosXattrIter.cc.o
[ 4%] Building CXX object src/librados/CMakeFiles/librados_objs.dir/RadosClient.cc.o
src/librados/CMakeFiles/librados_objs.dir/build.make:62: recipe for target 'src/librados/CMakeFiles/librados_objs.dir/loCtxImpl.cc.o' failed
make3: [src/librados/CMakeFiles/librados_objs.dir/loCtxImpl.cc.o] Error 1
make3: Waiting for unfinished jobs....
In file included from /home/pi/ceph_kraken/ceph/src/include/encoding.h:25:0,
from /home/pi/ceph_kraken/ceph/src/common/entity_name.h:22,
from /home/pi/ceph_kraken/ceph/src/common/config.h:26,
from /home/pi/ceph_kraken/ceph/src/librados/RadosClient.cc:26:
/home/pi/ceph_kraken/ceph/src/include/denc.h: In instantiation of 'typename std::enable_if<((traits:: supported 1) && (! traits::
featured))>::type decode_nohead(size_t, T&, ceph::buffer::list::iterator&) [with T = std::basic_string<char>; traits =
denc_traits<std::basic_string<char>; >; typename std::enable_if<((traits:: supported 1) && (! traits:: featured))>::type = void; size_t
= unsigned int]':
/home/pi/ceph_kraken/ceph/src/messages/MOSDOp.h:397:41: required from here
/home/pi/ceph_kraken/ceph/src/include/denc.h:1337:35: error: 'decode_nohead' is not a member of 'denc_traits<std::basic_string<char> >'
traits::decode_nohead(num, o, cp);
^
src/librados/CMakeFiles/librados_objs.dir/build.make:110: recipe for target 'src/librados/CMakeFiles/librados_objs.dir/RadosClient.cc.o'
failed
make3: [src/librados/CMakeFiles/librados_objs.dir/RadosClient.cc.o] Error 1
CMakeFiles/Makefile2:3552: recipe for target 'src/librados/CMakeFiles/librados_objs.dir/all' failed
make2: [src/librados/CMakeFiles/librados_objs.dir/all] Error 2
CMakeFiles/Makefile2:243: recipe for target 'CMakeFiles/tests.dir/rule' failed
make1: [CMakeFiles/tests.dir/rule] Error 2
Makefile:186: recipe for target 'tests' failed
make: ** [tests] Error 2
```

#20 - 03/26/2017 10:35 AM - gyorgy kiss

Oh sorry, I'm not formatted correctly my last message. Shame on me.

#21 - 03/26/2017 03:36 PM - Romain Gobinet

Kefu,

There was an issue with my source tree, so i create a fresh one (with <https://github.com/ceph/ceph/pull/14099> applied). I confirm that the commit of rocksdb referenced by ceph's master does contain <https://github.com/facebook/rocksdb/commit/4e35ffdfab1c86487cdad33d8eebf29ee3ceee04> .

But i can't explain why a "git submodule ... --force" doesn't to the trick.

By the way there is another issue with ARM compilation ;)

Here are the output :

```
[ 20%] Building CXX object src/osd/CMakeFiles/osd.dir/OSD.cc.o
cd /mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/src/osd && /usr/bin/arm-linux-gnueabi-g++ -DCEPH_LIBDIR="/usr/lib" -DCEPH_PKGLIBDIR="/usr/lib/ceph" -D__linux__ -isystem /mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include -I/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/src/include -I/mnt/sdal/ceph-build/ceph-master-reloaded/src -isystem /mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/include -I/mnt/sdal/ceph-build/ceph-master-reloaded/src/xxHash -g -O2 -fstack-protector-strong -Wformat -Werror=format-security -Wdate-time -D_FORTIFY_SOURCE=2 -Wall -Wtype-limits -Wignored-qualifiers -Winit-self -Wpointer-arith -Werror=format-security -fno-strict-aliasing -fsigned-char -rdynamic -Wno-unknown-pragmas -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -fstack-protector-strong -fdiagnostics-color=auto -I/usr/include/nss -I/usr/include/nspr -I/usr/include -fPIC -DHAVE_CONFIG_H -D__CEPH__ -D_REENTRANT -D_THREAD_SAFE -D__STDC_FORMAT_MACROS -D_GNU_SOURCE -D_FILE_OFFSET_BITS=64 -std=c++11 -o CMakeFiles/osd.dir/OSD.cc.o -c /mnt/sdal/ceph-build/ceph-master-reloaded/src/osd/OSD.cc
arm-linux-gnueabi-g++: internal compiler error: Killed (program cclplus)
Please submit a full bug report,
with preprocessed source if appropriate.
See <file:///usr/share/doc/gcc-5/README.Bugs> for instructions.
src/osd/CMakeFiles/osd.dir/build.make:65: recipe for target 'src/osd/CMakeFiles/osd.dir/OSD.cc.o' failed
```

It seems to be a GCC problem :(

**#22 - 03/26/2017 03:43 PM - Romain Gobinet**

Ok ... shame on me, after reading the kernel log :

```
Out of memory: Kill process 15983 (cc1plus) score 671 or sacrifice child
```

I try to compile on a small SBC and i forgot to setup a swap ...

I will do what is necessary and keep you informed.

**#23 - 03/26/2017 07:02 PM - Romain Gobinet**

It's better with swap :) It takes a very long time to compile on such a small device.

And it failed again (sig) but in a diferent way this time and further than before (39% !!) :

```
[ 39%] Building CXX object src/librbd/CMakeFiles/rbd_internal.dir/io/ImageRequest.cc.o
cd /mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/src/librbd && /usr/bin/arm-linux-gnueabi-
f-g++ -DCEPH_LIBDIR=\"/usr/lib\" -DCEPH_PKGLIBDIR=\"/usr/lib/ceph\" -D__linux__ -isystem /mnt/sdal/ceph-buil
d/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include -I/mnt/sdal/ceph-build/ceph-master-reloaded/obj-a
rm-linux-gnueabi/src/include -I/mnt/sdal/ceph-build/ceph-master-reloaded/src -isystem /mnt/sdal/ceph-build/c
eph-master-reloaded/obj-arm-linux-gnueabi/include -I/mnt/sdal/ceph-build/ceph-master-reloaded/src/xxHash -g
-O2 -fstack-protector-strong -Wformat -Werror=format-security -Wdate-time -D_FORTIFY_SOURCE=2 -Wall -Wtype-l
imits -Wignored-qualifiers -Winit-self -Wpointer-arith -Werror=format-security -fno-strict-aliasing -fsigned-c
har -rdynamic -Wno-unknown-pragmas -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_
SOURCE=2 -fstack-protector-strong -fdiagnostics-color=auto -I/usr/include/nss -I/usr/include/nspr -I/usr/inclu
de -fPIC -DHAVE_CONFIG_H -D__CEPH__ -D_REENTRANT -D_THREAD_SAFE -D__STDC_FORMAT_MACROS -D_GNU_SOURCE -D_FILE
_OFFSET_BITS=64 -std=c++11 -o CMakeFiles/rbd_internal.dir/io/ImageRequest.cc.o -c /mnt/sdal/ceph-build/ceph-ma
ster-reloaded/src/librbd/io/ImageRequest.cc
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/io/ImageRequest.cc: In instantiation of 'int librbd::io::
ImageRequest<ImageCtxT>::clip_request() [with ImageCtxT = librbd::ImageCtx]':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/io/ImageRequest.cc:832:28:   required from here
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/io/ImageRequest.cc:184:20: error: cannot convert 'size_t*
 {aka unsigned int*}' to 'uint64_t* {aka long long unsigned int*}' for argument '3' to 'int librbd::clip_io(li
brbd::ImageCtx*, uint64_t, uint64_t*)'
    int r = clip_io(get_image_ctx(&m_image_ctx), image_extent.first, &clip_len);
                   ^
src/librbd/CMakeFiles/rbd_internal.dir/build.make:1025: recipe for target 'src/librbd/CMakeFiles/rbd_internal.
dir/io/ImageRequest.cc.o' failed
make[4]: *** [src/librbd/CMakeFiles/rbd_internal.dir/io/ImageRequest.cc.o] Error 1
make[4]: Leaving directory '/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/src/librbd'
CMakeFiles/Makefile2:19974: recipe for target 'src/librbd/CMakeFiles/rbd_internal.dir/all' failed
make[3]: *** [src/librbd/CMakeFiles/rbd_internal.dir/all] Error 2
```

**#24 - 03/26/2017 07:57 PM - gyorgy kiss**

Hi Romain, Kefu,

I have made a total new local source:

```
git clone git://github.com/ceph/ceph
git submodule update --init --recursive --force
git apply --stat {path}/14099.patch
```

but as far I see, something different on end:

```
ceph $ git describe
v12.0.0-1788-gb894dc6

ceph/src/rocksdb $ git describe
2.7.fb-4804-g3b4ac80
```

Can you help me, what have I made wrong?

Thanks

**#25 - 03/26/2017 08:35 PM - Romain Gobinet**

Nothing wrong, i've almost the same here !

v12.0.0-1739-g9de1f1a and 2.7.fb-4804-g3b4ac80, that's great but it failed to compile.

**#26 - 03/26/2017 09:04 PM - gyorgy kiss**

Thanks Romain,

The only difference yet I see, my compile process fails at 4%... (encoding, nohead. etc.) My git apply for 14099 is correct so? (that changed some files as far I see :))..

**#27 - 03/26/2017 10:17 PM - gyorgy kiss**

Hi,

An interesting status:  
on brand new hdd, new source taken.

```
git clone https://github.com/ceph/ceph
git apply {path}/14099.patch
```

and now check what we have:

```
ceph $ git describe
v12.0.0-1788-gb894dc6
ceph/src/rocksdb $ git describe
v12.0.0-1788-gb894dc
```

That should be without submodule update?  
now I gave out easy: dpkg-buildpackage -j8

let see :)

**#28 - 03/27/2017 04:18 AM - Kefu Chai**

good news, everyone! we are close.

@Romain, since <https://github.com/ceph/ceph/pull/14099> is pulled by Sage into his testing branch for testing, and the new issue resides in RBD, i am posting another fix at <https://github.com/ceph/ceph/pull/14159>.

you need to apply both fixes to try to compile Ceph on ARM32.

@gyorgy, i agree with Romain, you did nothing wrong at [#18938-24](#). the reason that the compilation error'ed out earlier than Romain is probably the uncertainty caused by parallelism, where one of the compilation jobs reached the decode\_nohead issue earlier. just you were not lucky in that run. and in [#18938-27](#), you didn't update the submodule, which will lead to a build failure earlier =(

**#29 - 03/27/2017 08:13 PM - gyorgy kiss**

Hi Kefu, Hi Romain

I gave a try:

```
pi@node1:~/dev/ceph_kraken $ git clone git://github.com/ceph/ceph
Cloning into 'ceph'...
remote: Counting objects: 484034, done.
remote: Compressing objects: 100% (10/10), done.
remote: Total 484034 (delta 5), reused 0 (delta 0), pack-reused 484024
Receiving objects: 100% (484034/484034), 193.98 MiB | 1.34 MiB/s, done.
Resolving deltas: 100% (381406/381406), done.
Checking connectivity... done.
pi@node1:~/dev/ceph_kraken $ git submodule update --init --recursive --force
...
pi@node1:~/dev/ceph_kraken/ceph $ git apply --stat ../../../14099.patch
src/include/denc.h | 13 ++++++-----
src/include/denc.h | 19 ++++++-----
src/test/encoding.cc | 34 ++++++-----
3 files changed, 61 insertions(+), 5 deletions(-)

pi@node1:~/dev/ceph_kraken/ceph $ git apply --stat ../../../14159.patch
src/librbd/io/ImageRequest.cc | 2 +-
1 file changed, 1 insertion(+), 1 deletion(-)

pi@node1:~/dev/ceph_kraken/ceph $ git describe
v12.0.0-1803-g52468ae

pi@node1:~/dev/ceph_kraken/ceph/src/rocksdb $ git describe
2.7.fb-4804-g3b4ac80

pi@node1:~/dev/ceph_kraken/ceph $ vi install-deps.sh
(insert raspbian as known os)

pi@node1:~/dev/ceph_kraken/ceph $ ./run-make-check.sh
Checking hostname sanity... OK

[ 2%] Building CXX object src/osdc/CMakeFiles/osdc_rbd_objs.dir/Striper.cc.o
In file included from /home/pi/dev/ceph_kraken/ceph/src/include/encoding.h:25:0
... fail ...
```

ok something was wrong. I nuked everything again...  
next shoot, lets see without parallism, and on the good-old way:

```
pi@node1:~/dev/ceph_kraken $ git clone git://github.com/ceph/ceph
pi@node1:~/dev/ceph_kraken $ git submodule update --init --recursive --force
pi@node1:~/dev/ceph_kraken/ceph $ git apply --stat ../../../14099.patch
pi@node1:~/dev/ceph_kraken/ceph $ git apply --stat ../../../14159.ceph
pi@node1:~/dev/ceph_kraken/ceph $ dpkg-buildpackage
```

it runs now, :) I will send the result.



#30 - 03/27/2017 09:04 PM - gyorgy kiss

Hello,

here is my result...

what should I check now?

```
[ 1%] Building CXX object src/CMakeFiles/common-objs.dir/crush/CrushWrapper.cc.o
cd /home/pi/dev/ceph_kraken/ceph/obj-arm-linux-gnueabihf/src && /usr/bin/c++ -DCEPH_LIBDIR=\"/usr/lib\" -DCEPH_PKGLIBDIR=\"/usr/lib/ceph\" -D__linux__ -isystem /home/pi/dev/ceph_kraken/ceph/obj-arm-linux-gnueabihf/boost/include -I/home/pi/dev/ceph_kraken/ceph/obj-arm-linux-gnueabihf/src/include -I/home/pi/dev/ceph_kraken/ceph/src -isystem /home/pi/dev/ceph_kraken/ceph/obj-arm-linux-gnueabihf/include -I/home/pi/dev/ceph_kraken/ceph/src/xxHash -g -O2 -fstack-protector-strong -Wformat -Werror=format-security -D_FORTIFY_SOURCE=2 -Wall -Wtype-limits -Wignored-qualifiers -Winit-self -Wpointer-arith -Werror=format-security -fno-strict-aliasing -fsigned-char -rdynamic -Wno-unknown-pragmas -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -fstack-protector-strong -fdiagnostics-color=auto -I/usr/include/nss -I/usr/include/nspr -I/usr/include -fno-builtin-malloc -fno-builtin-calloc -fno-builtin-realloc -fno-builtin-free -fPIC -DHAVE_CONFIG_H -D__CEPH__ -D_REENTRANT -D_THREAD_SAFE -D__STDC_FORMAT_MACROS -D_GNU_SOURCE -D_FILE_OFFSET_BITS=64 -std=c++11 -o CMakeFiles/common-objs.dir/crush/CrushWrapper.cc.o -c /home/pi/dev/ceph_kraken/ceph/src/crush/CrushWrapper.cc
In file included from /home/pi/dev/ceph_kraken/ceph/src/include/encoding.h:25:0,
      from /home/pi/dev/ceph_kraken/ceph/src/include/uuid.h:8,
      from /home/pi/dev/ceph_kraken/ceph/src/include/types.h:21,
      from /home/pi/dev/ceph_kraken/ceph/src/msg/msg_types.h:21,
      from /home/pi/dev/ceph_kraken/ceph/src/osd/osd_types.h:31,
      from /home/pi/dev/ceph_kraken/ceph/src/crush/CrushWrapper.cc:4:
/home/pi/dev/ceph_kraken/ceph/src/include/denc.h: In instantiation of 'typename std::enable_if<(traits::supported && (! traits::featured))>::type decode_nohead(size_t, T&, ceph::buffer::list::iterator&) [with T = std::basic_string<char>; traits = denc_traits<std::basic_string<char>, void>; typename std::enable_if<(traits::supported && (! traits::featured))>::type = void; size_t = unsigned int]':
/home/pi/dev/ceph_kraken/ceph/src/crush/CrushWrapper.cc:1412:40:   required from here
/home/pi/dev/ceph_kraken/ceph/src/include/denc.h:1398:35: error: 'decode_nohead' is not a member of 'denc_traits<std::basic_string<char>, void>'
      traits::decode_nohead(num, o, cp);
      ^
src/CMakeFiles/common-objs.dir/build.make:546: recipe for target 'src/CMakeFiles/common-objs.dir/crush/CrushWrapper.cc.o' failed
make[4]: *** [src/CMakeFiles/common-objs.dir/crush/CrushWrapper.cc.o] Error 1
make[4]: Leaving directory '/home/pi/dev/ceph_kraken/ceph/obj-arm-linux-gnueabihf'
CMakeFiles/Makefile2:764: recipe for target 'src/CMakeFiles/common-objs.dir/all' failed
make[3]: *** [src/CMakeFiles/common-objs.dir/all] Error 2
make[3]: Leaving directory '/home/pi/dev/ceph_kraken/ceph/obj-arm-linux-gnueabihf'
Makefile:141: recipe for target 'all' failed
make[2]: *** [all] Error 2
make[2]: Leaving directory '/home/pi/dev/ceph_kraken/ceph/obj-arm-linux-gnueabihf'
cd /home/pi/dev/ceph_kraken/ceph
dh_auto_build: make -j1 returned exit code 2
debian/rules:33: recipe for target 'override_dh_auto_build' failed
make[1]: *** [override_dh_auto_build] Error 2
make[1]: Leaving directory '/home/pi/dev/ceph_kraken/ceph'
debian/rules:26: recipe for target 'build' failed
make: *** [build] Error 2
dpkg-buildpackage: error: debian/rules build gave error exit status 2
pi@node1:~/dev/ceph_kraken/ceph $
```



```

/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.h
pp:286: multiple definition of `typeinfo for librbd::Journal<librbd::ImageCtx>::C_ReplayProcessSafe'
CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-
gnueabi/boost/include/boost/function/function_base.hpp:307: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o:(.rodata+0x3418): multiple defi
nition of `typeinfo name for librbd::AsyncRequest<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:(.rodata+0x1b7c): first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `~C_StateCallbackA
dapter':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:59: multiple definition of `typeinfo for librbd::
AsyncRequest<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:155: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `rados_state_callb
ack<librbd::operation::DisableFeaturesRequest<librbd::(anonymous namespace)::MockOperationImageCtx>, &librbd::
operation::DisableFeaturesRequest<librbd::(anonymous namespace)::MockOperationImageCtx>::handle_set_features,
true>':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:38: multiple definition of `typeinfo name for lib
rbd::operation::Request<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:339: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `~C_StateCallbackA
dapter':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:59: multiple definition of `typeinfo for librbd::
operation::Request<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:155: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `rados_state_callb
ack<librbd::operation::DisableFeaturesRequest<librbd::(anonymous namespace)::MockOperationImageCtx>, &librbd::
operation::DisableFeaturesRequest<librbd::(anonymous namespace)::MockOperationImageCtx>::handle_set_features,
true>':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:43: multiple definition of `typeinfo name for lib
rbd::operation::Request<librbd::ImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:172: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `~C_CallbackAdapte
r':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:46: multiple definition of `typeinfo for librbd::
operation::Request<librbd::ImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `send_close_journa
l':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/operation/DisableFeaturesRequest.cc:351: multiple definit
ion of `typeinfo name for librbd::operation::Request<librbd::ImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googletest/include/gtest/internal/gtest-linked_ptr.h:93: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `~MonomorphicImpl'
:
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/gmock-actions.h:438: multipl
e definition of `typeinfo for librbd::operation::Request<librbd::ImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `C_StateCallbackAd
apter':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:62: multiple definition of `typeinfo name for lib
rbd::AsyncObjectThrottle<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:252: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `~gmock_Impl':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librbd/test_mock_fixture.h:41: multiple definition of `type
info for librbd::AsyncObjectThrottle<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:3732: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o:(.rodata+0x3020): multiple defin
ition of `typeinfo name for librbd::AsyncRequest<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:3732: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `~gmock_Impl':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librbd/test_mock_fixture.h:41: multiple definition of `type
info for librbd::AsyncRequest<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:155: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `expect_block_reque
sts':

```

```

/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librbd/operation/test_mock_EnableFeaturesRequest.cc:232: multiple definition of `typeinfo name for librbd::operation::Request<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:339: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `~gmock_Impl':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librbd/test_mock_fixture.h:41: multiple definition of `typeinfo for librbd::operation::Request<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librados_test_stub/MockTestMemToCtxImpl.h:155: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `testing::internal::MatcherBase<int>::~~MatcherBase()':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:294: multiple definition of `typeinfo name for librbd::operation::Request<librbd::ImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librados_test_stub/MockTestMemToCtxImpl.h:172: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `void std::__cxx11::basic_string<char, std::char_traits<char>, std::allocator<char> >::_M_construct<char const*>(char const*, char const*, std::forward_iterator_tag)':
/usr/include/c++/5/bits/basic_string.tcc:210: multiple definition of `typeinfo for librbd::operation::Request<librbd::ImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `testing::Matcher<int>::Matcher(int)':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:294: multiple definition of `typeinfo name for librbd::operation::Request<librbd::ImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gtest/internal/gtest-linked_ptr.h:93: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `void std::__cxx11::basic_string<char, std::char_traits<char>, std::allocator<char> >::_M_construct<char const*>(char const*, char const*, std::forward_iterator_tag)':
/usr/include/c++/5/bits/basic_string.tcc:215: multiple definition of `typeinfo for librbd::operation::Request<librbd::ImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `librbd::AsyncRequest<librbd::MockImageCtx>::finish(int)':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/AsyncRequest.h:59: multiple definition of `typeinfo name for librbd::AsyncObjectThrottle<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:252: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `void std::__cxx11::basic_string<char, std::char_traits<char>, std::allocator<char> >::_M_construct<char const*>(char const*, char const*, std::forward_iterator_tag)':
/usr/include/c++/5/bits/basic_string.tcc:221: multiple definition of `typeinfo for librbd::AsyncObjectThrottle<librbd::ImageCtx>'
[...many pages of this...]
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `manage':
/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.hpp:404: multiple definition of `typeinfo for librbd::operation::Request<librbd::MockImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:328: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `expect_get_object_name':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librbd/operation/test_mock_SnapshotRollbackRequest.cc:124: multiple definition of `typeinfo name for librbd::operation::Request<librbd::MockImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/internal/gmock-internal-utils.h:296: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `manager':
/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.hpp:360: multiple definition of `typeinfo for librbd::operation::Request<librbd::MockImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:859: first defined here
collect2: error: ld returned 1 exit status
src/test/librbd/CMakeFiles/unittest_librbd.dir/build.make:1208: recipe for target 'bin/unittest_librbd' failed
make[4]: *** [bin/unittest_librbd] Error 1
make[4]: Leaving directory '/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi'
CMakeFiles/Makefile2:15017: recipe for target 'src/test/librbd/CMakeFiles/unittest_librbd.dir/all' failed
make[3]: *** [src/test/librbd/CMakeFiles/unittest_librbd.dir/all] Error 2

```

The second one :

```
[...]  
CMakeFiles/unittest_rbd_mirror.dir/test_mock_ImageReplayer.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/  
tools/rbd_mirror/ImageReplayer.cc:96: first defined here  
CMakeFiles/unittest_rbd_mirror.dir/test_mock_ImageSyncThrottler.cc.o: In function `std::basic_ostream<char, st  
d::char_traits<char> >& std::operator<< <std::char_traits<char> >(std::basic_ostream<char, std::char_traits<ch  
ar> >&, char const*)':  
/usr/include/c++/5/ostream:561: multiple definition of `typeinfo name for rbd::mirror::ImageSyncThrottler<libr  
bd::ImageCtx>::C_SyncHolder'  
CMakeFiles/unittest_rbd_mirror.dir/test_mock_ImageReplayer.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/  
tools/rbd_mirror/ImageReplayer.cc:1536: first defined here  
CMakeFiles/unittest_rbd_mirror.dir/test_mock_ImageSyncThrottler.cc.o: In function `operator()':  
/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/rbd_mirror/test_mock_ImageSyncThrottler.cc:73: multiple def  
inition of `typeinfo for rbd::mirror::ImageSyncThrottler<librbd::ImageCtx>::C_SyncHolder'  
CMakeFiles/unittest_rbd_mirror.dir/test_mock_ImageReplayer.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/  
tools/rbd_mirror/ImageReplayer.cc:110: first defined here  
collect2: error: ld returned 1 exit status  
src/test/rbd_mirror/CMakeFiles/unittest_rbd_mirror.dir/build.make:581: recipe for target 'bin/unittest_rbd_mir  
ror' failed  
make[4]: *** [bin/unittest_rbd_mirror] Error 1  
make[4]: Leaving directory '/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/hf'  
CMakeFiles/Makefile2:18078: recipe for target 'src/test/rbd_mirror/CMakeFiles/unittest_rbd_mirror.dir/all' fai  
led  
make[3]: *** [src/test/rbd_mirror/CMakeFiles/unittest_rbd_mirror.dir/all] Error 2
```

RG

**#32 - 03/28/2017 09:09 AM - Kefu Chai**

@gyorgy, i think <https://github.com/ceph/ceph/pull/14099> should address your issue. could you double check it?

@Romain, looks like a bug in GCC, see <https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=608029>. what is the GCC version you are using?

**#33 - 03/28/2017 05:26 PM - Romain Gobinet**

Hi !

I've done a mono threaded retry (just in case ...) :

```

[ 53%] Building CXX object src/tools/rbd/CMakeFiles/rbd.dir/action/Import.cc.o
cd /mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/src/tools/rbd && /usr/bin/arm-linux-gnueabi-g++ -DCEPH_LIBDIR=\"/usr/lib\" -DCEPH_PKGLIBDIR=\"/usr/lib/ceph\" -D__linux__ -isystem /mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include -I/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/src/include -I/mnt/sdal/ceph-build/ceph-master-reloaded/src -isystem /mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/include -I/mnt/sdal/ceph-build/ceph-master-reloaded/src/xxHash -g -O2 -fstack-protector-strong -Wformat -Werror=format-security -Wdate-time -D_FORTIFY_SOURCE=2 -Wall -Wtype-limits -Wignored-qualifiers -Winit-self -Wpointer-arith -Werror=format-security -fno-strict-aliasing -fsignaling -rdynamic -Wno-unknown-pragmas -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -fstack-protector-strong -fdiagnostics-color=auto -I/usr/include/nss -I/usr/include/nspr -I/usr/include -fPIE -DHAVE_CONFIG_H -D__CEPH__ -D_REENTRANT -D_THREAD_SAFE -D__STDC_FORMAT_MACROS -D_GNU_SOURCE -D_FILE_OFFSET_BITS=64 -std=c++11 -o CMakeFiles/rbd.dir/action/Import.cc.o -c /mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc
/mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc: In function 'int rbd::action::import::skip_tag(int, uint64_t)':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:262:43: error: no matching function for call to 'min(uint64_t&, unsigned int)'
    uint64_t len = min(length, sizeof(buf));
                        ^
In file included from /usr/include/c++/5/bits/stl_tree.h:63:0,
                 from /usr/include/c++/5/set:60,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/ArgumentTypes.h:8,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:4:
/usr/include/c++/5/bits/stl_algobase.h:195:5: note: candidate: template<class _Tp> const _Tp& std::min(const _Tp&, const _Tp&)
    min(const _Tp& __a, const _Tp& __b)
    ^
/mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:262:43: note: deduced conflicting types for parameter 'const _Tp' ('long long unsigned int' and 'unsigned int')
    uint64_t len = min(length, sizeof(buf));
[... ]
/mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc: In function 'int rbd::action::import::do_import_v1(int, librbd::Image&, uint64_t, size_t, rbd::utils::ProgressContext&)':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:609:28: error: no matching function for call to 'min(size_t&, uint64_t&)'
    reqlen = min(reqlen, size);
                ^
In file included from /usr/include/c++/5/bits/stl_tree.h:63:0,
                 from /usr/include/c++/5/set:60,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/ArgumentTypes.h:8,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:4:
/usr/include/c++/5/bits/stl_algobase.h:195:5: note: candidate: template<class _Tp> const _Tp& std::min(const _Tp&, const _Tp&)
    min(const _Tp& __a, const _Tp& __b)
    ^
/mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:609:28: note: deduced conflicting types for parameter 'const _Tp' ('unsigned int' and 'uint64_t {aka long long unsigned int}')
    reqlen = min(reqlen, size);
                ^
In file included from /usr/include/c++/5/bits/stl_tree.h:63:0,
                 from /usr/include/c++/5/set:60,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/ArgumentTypes.h:8,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:4:
/usr/include/c++/5/bits/stl_algobase.h:243:5: note: candidate: template<class _Tp, class _Compare> const _Tp& std::min(const _Tp&, const _Tp&, _Compare)
    min(const _Tp& __a, const _Tp& __b, _Compare __comp)
    ^
/mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:609:28: note: deduced conflicting types for parameter 'const _Tp' ('unsigned int' and 'uint64_t {aka long long unsigned int}')
    reqlen = min(reqlen, size);
                ^
In file included from /usr/include/c++/5/algorithm:62:0,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/any.hpp:17,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/ArgumentTypes.h:11,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:4:
/usr/include/c++/5/bits/stl_algo.h:3445:5: note: candidate: template<class _Tp> _Tp std::min(std::initializer_list<_Tp>)
    min(initializer_list<_Tp> __l)
    ^
/mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:609:28: note: mismatched types 'std

```

```

::initializer_list<_Tp>' and 'unsigned int'
    reqlen = min(reqlen, size);
                ^
In file included from /usr/include/c++/5/algorithm:62:0,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/an
y.hpp:17,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/ArgumentTypes.h:11,
                 from /mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:4:
/usr/include/c++/5/bits/stl_algo.h:3451:5: note: candidate: template<class _Tp, class _Compare> _Tp std::min(s
td::initializer_list<_Tp>, _Compare)
    min(initializer_list<_Tp> __l, _Compare __comp)
    ^
/usr/include/c++/5/bits/stl_algo.h:3451:5: note:   template argument deduction/substitution failed:
/mnt/sdal/ceph-build/ceph-master-reloaded/src/tools/rbd/action/Import.cc:609:28: note:   mismatched types 'std
::initializer_list<_Tp>' and 'unsigned int'
    reqlen = min(reqlen, size);
                ^

src/tools/rbd/CMakeFiles/rbd.dir/build.make:497: recipe for target 'src/tools/rbd/CMakeFiles/rbd.dir/action/Im
port.cc.o' failed
make[4]: *** [src/tools/rbd/CMakeFiles/rbd.dir/action/Import.cc.o] Error 1
make[4]: Leaving directory '/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/
CMakeFiles/Makefile2:19538: recipe for target 'src/tools/rbd/CMakeFiles/rbd.dir/all' failed
make[3]: *** [src/tools/rbd/CMakeFiles/rbd.dir/all] Error 2
make[3]: Leaving directory '/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/
Makefile:141: recipe for target 'all' failed
make[2]: *** [all] Error 2
make[2]: Leaving directory '/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/
cd /mnt/sdal/ceph-build/ceph-master-reloaded
dh_auto_build: make -j1 returned exit code 2
debian/rules:33: recipe for target 'override_dh_auto_build' failed
make[1]: *** [override_dh_auto_build] Error 2
make[1]: Leaving directory '/mnt/sdal/ceph-build/ceph-master-reloaded'
debian/rules:26: recipe for target 'build' failed
make: *** [build] Error 2
dpkg-buildpackage: error: debian/rules build gave error exit status 2

```

Here is my gcc/lib's/utls version :

ii	gcc	4:5.3.1-1ubuntu1	armhf	GNU C compiler
ii	gcc-5	5.4.0-6ubuntu1~16.04.4	armhf	GNU C compiler
ii	gcc-5-base:armhf	5.4.0-6ubuntu1~16.04.4	armhf	GCC, the GNU Compiler Collection (base package)
ii	gcc-6-base:armhf	6.0.1-0ubuntu1	armhf	GCC, the GNU Compiler Collection (base package)
ii	libgcc-5-dev:armhf	5.4.0-6ubuntu1~16.04.4	armhf	GCC support library (development files)
ii	libgcc1:armhf	1:6.0.1-0ubuntu1	armhf	GCC support library
ii	g++	4:5.3.1-1ubuntu1	armhf	GNU C++ compiler
ii	g++-5	5.4.0-6ubuntu1~16.04.4	armhf	GNU C++ compiler
ii	libstdc++-5-dev:armhf	5.4.0-6ubuntu1~16.04.4	armhf	GNU Standard C++ Library v3 (development files)
ii	libstdc++6:armhf	5.4.0-6ubuntu1~16.04.4	armhf	GNU Standard C++ Library v3
ii	libc-bin	2.23-0ubuntu7	armhf	GNU C Library: Binaries
ii	libc-dev-bin	2.23-0ubuntu7	armhf	GNU C Library: Development binaries
ii	libc6:armhf	2.23-0ubuntu7	armhf	GNU C Library: Shared libraries
ii	libc6-dbg:armhf	2.23-0ubuntu7	armhf	GNU C Library: detached debugging symbols
ii	libc6-dev:armhf	2.23-0ubuntu7	armhf	GNU C Library: Development Libraries and Header Files
ii	cmake	3.5.1-1ubuntu3	armhf	cross-platform, open-source make system
ii	cmake-data	3.5.1-1ubuntu3	all	CMake data files (modules, templates and documentation)
ii	make	4.1-6	armhf	utility for directing compilation

### #34 - 03/28/2017 06:10 PM - Kefu Chai

<https://github.com/ceph/ceph/pull/14202> is posted to address the above building .

### #35 - 03/28/2017 06:43 PM - gyorgy kiss

Hi,

I double checked the source. It should be applied as far I see in source files.

I think there is the main difference for me: I am on raspbian base. I have cmake newer(?) but everthing other is much lower than Romain. Than my plan now change to ubuntu too (at least for a test, I dont want to update all dependencies for raspbian, I will play with ceph :)

there the gcc and others:

ii gcc	4:4.9.2-2	armhf	GNU C compiler
ii gcc-4.6-base:armhf	4.6.4-5+rpil	armhf	GCC, the GNU Compiler
Collection (base package)			
ii gcc-4.7-base:armhf	4.7.3-11+rpil	armhf	GCC, the GNU Compiler
Collection (base package)			
ii gcc-4.8-base:armhf	4.8.4-1	armhf	GCC, the GNU Compiler
Collection (base package)			
ii gcc-4.9	4.9.2-10	armhf	GNU C compiler
ii gcc-4.9-base:armhf	4.9.2-10	armhf	GCC, the GNU Compiler
Collection (base package)			
ii libgcc-4.9-dev:armhf	4.9.2-10	armhf	GCC support library (d
evelopment files)			
ii libgcc1:armhf	1:4.9.2-10	armhf	GCC support library
ii gcc	4:4.9.2-2	armhf	GNU C compiler
ii gcc-4.6-base:armhf	4.6.4-5+rpil	armhf	GCC, the GNU Compiler
Collection (base package)			
ii gcc-4.7-base:armhf	4.7.3-11+rpil	armhf	GCC, the GNU Compiler
Collection (base package)			
ii gcc-4.8-base:armhf	4.8.4-1	armhf	GCC, the GNU Compiler
Collection (base package)			
ii gcc-4.9	4.9.2-10	armhf	GNU C compiler
ii gcc-4.9-base:armhf	4.9.2-10	armhf	GCC, the GNU Compiler
Collection (base package)			
ii libgcc-4.9-dev:armhf	4.9.2-10	armhf	GCC support library (d
evelopment files)			
ii libgcc1:armhf	1:4.9.2-10	armhf	GCC support library
ii libc-bin	2.19-18+deb8u7	armhf	GNU C Library: Binarie
s			
ii libc-dev-bin	2.19-18+deb8u7	armhf	GNU C Library: Develop
ment binaries			
ii libc6:armhf	2.19-18+deb8u7	armhf	GNU C Library: Shared
libraries			
ii libc6-dbg:armhf	2.19-18+deb8u7	armhf	GNU C Library: detache
d debugging symbols			
ii libc6-dev:armhf	2.19-18+deb8u7	armhf	GNU C Library: Develop
ment Libraries and Header Files			
ii make	4.0-8.1	armhf	utility for directing
compilation			
i libstdc++-4.9-dev:armhf	4.9.2-10	armhf	GNU Standard C++ Librar
y v3 (development files)			
ii libstdc++6:armhf	4.9.2-10	armhf	
ii g++	4:4.9.2-2	armhf	GNU C++ compiler
ii g++-4.9	4.9.2-10	armhf	GNU C++ compiler
ii cmake	3.6.2-2~bpo8+1	armhf	cross-platform, open-s
ource make system			
ii cmake-data	3.6.2-2~bpo8+1	all	



**#36 - 03/28/2017 11:57 PM - Sebastien Luttringer**

Hi Kefu,

Did you progress on patch for 11.2.0?

I see the bug status was moved to Need Review, but I can't review nothing about the original BR (intel x86 / 11.2.0) or I missing something?

Cheers,

**#37 - 03/29/2017 01:55 AM - Kefu Chai**

@Sebastien, two PRs mentioned above

- <https://github.com/ceph/ceph/pull/14099>
- <https://github.com/ceph/ceph/pull/14159>

have been merged into master.

and <https://github.com/ceph/ceph/pull/14202> is pending on review.

normally, we want to fix bugs on master and backport the fixes to stable branch later.

**#38 - 03/29/2017 02:32 AM - Kefu Chai**

@gyorgy i am not sure why your building env failed to build the ceph source. and BTW, as [#18938-37](#) put, the first two fixes have been merged.

i have cmake 3.7.2 in my linux box. and i think gcc 4.9 is good enough for building the ceph master branch at the moment. as i don't have a arm32 machine around, i need to prepare a cross building env to reproduce your issue. i will give it a try later on, but it's not the first priority at this moment, so you might need to wait if the master just does not build for you.

**#39 - 03/29/2017 04:26 AM - Romain Gobinet**

The result of PR 14202:

```
[ 80%] Linking CXX executable ../../bin/unittest_librbd
cd /mnt/sda1/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/hf/src/test/librbd && /usr/bin/cmake -E cmake_link_script CMakeFiles/unittest_librbd.dir/link.txt --verbose=1
/usr/bin/arm-linux-gnueabi/g++ -g -O2 -fstack-protector-strong -Wformat -Werror=format-security -Wdate-time -D_FORTIFY_SOURCE=2 -Wall -Wtype-limits -Wignored-qualifiers -Winit-self -Wpointer-arith -Werror=format-security -fno-strict-aliasing -fsigned-char -rdynamic -Wno-unknown-pragmas -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -Wp,-U_FORTIFY_SOURCE,-D_FORTIFY_SOURCE=2 -fstack-protector-strong -fdiagnostics-color=auto -I/usr/include/nss -I/usr/include/nspr -I/usr/include -Wl,-Bsymbolic-functions -Wl,-z,relro -pie CMakeFiles/unittest_librbd.dir/test_BlockGuard.cc.o CMakeFiles/unittest_librbd.dir/test_Groups.cc.o CMakeFiles/unittest_librbd.dir/test_main.cc.o CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o CMakeFiles/unittest_librbd.dir/test_mock_ExclusiveLock.cc.o CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o CMakeFiles/unittest_librbd.dir/test_mock_ManagedLock.cc.o CMakeFiles/unittest_librbd.dir/test_mock_ObjectMap.cc.o CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PreAcquireRequest.cc.o CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PostAcquireRequest.cc.o CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PreReleaseRequest.cc.o CMakeFiles/unittest_librbd.dir/image/test_mock_RefreshRequest.cc.o CMakeFiles/unittest_librbd.dir/image/test_mock_RemoveRequest.cc.o CMakeFiles/unittest_librbd.dir/io/test_mock_ImageRequest.cc.o CMakeFiles/unittest_librbd.dir/journal/test_mock_OpenRequest.cc.o CMakeFiles/unittest_librbd.dir/journal/test_mock_PromoteRequest.cc.o CMakeFiles/unittest_librbd.dir/journal/test_mock_Replay.cc.o CMakeFiles/unittest_librbd.dir/managed_lock/test_mock_AcquireRequest.cc.o CMakeFiles/unittest_librbd.dir/managed_lock/test_mock_BreakRequest.cc.o CMakeFiles/unittest_librbd.dir/managed_lock/test_mock_GetLockerRequest.cc.o CMakeFiles/unittest_librbd.dir/managed_lock/test_mock_ReacquireRequest.cc.o CMakeFiles/unittest_librbd.dir/managed_lock/test_mock_ReleaseRequest.cc.o CMakeFiles/unittest_librbd.dir/mirror/test_mock_DisableRequest.cc.o CMakeFiles/unittest_librbd.dir/object_map/test_mock_Invalidatereques
```

```
t.cc.o CMakeFiles/unittest_librbd.dir/object_map/test_mock_LockRequest.cc.o CMakeFiles/unittest_librbd.dir/obj
ect_map/test_mock_RefreshRequest.cc.o CMakeFiles/unittest_librbd.dir/object_map/test_mock_ResizeRequest.cc.o C
MakeFiles/unittest_librbd.dir/object_map/test_mock_SnapshotCreateRequest.cc.o CMakeFiles/unittest_librbd.dir/o
bject_map/test_mock_SnapshotRemoveRequest.cc.o CMakeFiles/unittest_librbd.dir/object_map/test_mock_SnapshotRol
lbackRequest.cc.o CMakeFiles/unittest_librbd.dir/object_map/test_mock_UnlockRequest.cc.o CMakeFiles/unittest_l
ibrbd.dir/object_map/test_mock_UpdateRequest.cc.o CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFe
aturesRequest.cc.o CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o CMakeFiles/un
ittest_librbd.dir/operation/test_mock_Request.cc.o CMakeFiles/unittest_librbd.dir/operation/test_mock_ResizeRe
quest.cc.o CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotCreateRequest.cc.o CMakeFiles/unittest_l
ibrbd.dir/operation/test_mock_SnapshotProtectRequest.cc.o CMakeFiles/unittest_librbd.dir/operation/test_mock_S
napshotRemoveRequest.cc.o CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o CMak
eFiles/unittest_librbd.dir/operation/test_mock_SnapshotUnprotectRequest.cc.o CMakeFiles/unittest_librbd.dir/wa
tcher/test_mock_RewatchRequest.cc.o ../../CMakeFiles/common_texttable_obj.dir/common/TextTable.cc.o -o ../../
./bin/unittest_librbd ../.././lib/libcls_rbd.so.1.0.0 ../.././lib/libcls_rbd_client.a ../.././lib/libcls_l
ock.so.1.0.0 ../.././lib/libcls_lock_client.a ../.././lib/libjournal.a ../.././lib/libjournal_test_mock.a .
../.././lib/libcls_journal.so.1.0.0 ../.././lib/libcls_journal_client.a ../.././lib/librados_test_stub.a ../
../.././lib/librados.so.2.0.0 ../.././lib/librbd_test.a ../.././lib/librbd_test_mock.a ../.././lib/librbd_api
.a ../.././lib/librbd_internal.a ../.././lib/librbd_types.a ../.././lib/libosdc.a ../.././lib/libglobal.a
../.././lib/libgmock_main.a ../.././lib/libgmock.a ../.././lib/libgtest.a -lpthread -ldl ../.././lib/libra
dostest.a ../.././lib/libceph-common.so.0 ../.././lib/liberasure_code.a ../.././boost/lib/libboost_thread.a
../.././boost/lib/libboost_system.a ../.././boost/lib/libboost_regex.a ../.././boost/lib/libboost_random.a
../.././boost/lib/libboost_program_options.a ../.././boost/lib/libboost_date_time.a ../.././boost/lib/libb
oost_iostreams.a -lblkid -lssl3 -lsmime3 -lnss3 -lnssutil3 -lplds4 -lplc4 -lnspr4 -lpthread -lz -Wl,-Bstatic -
latomic_ops -Wl,-Bdynamic -lpthread -lrt -ldl -lresolv -libverbs ../.././lib/libjson_spirit.a ../.././lib/li
bcommon_utf8.a -Wl,-rpath,/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/lib
CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PostAcquireRequest.cc.o:(.rodata+0x3e98): multiple def
inition of `typeinfo name for librbd::Journal<librbd::ImageCtx>::ReplayHandler'
CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o:(.rodata+0x65a4): first defined here
CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PostAcquireRequest.cc.o: In function `manage_small':
/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.h
pp:303: multiple definition of `typeinfo for librbd::Journal<librbd::ImageCtx>::ReplayHandler'
CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-
gnueabi/boost/include/boost/type_index/stl_type_index.hpp:203: first defined here
CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PostAcquireRequest.cc.o: In function `testing::interna
l::scoped_ptr<std::__cxx11::basic_string<char, std::char_traits<char>, std::allocator<char> >>::~scoped_ptr()
':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gtest/internal/gtest-port.h:1120:
multiple definition of `typeinfo name for librbd::Journal<librbd::ImageCtx>::MetadataListener'
CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o:/usr/include/c++/5/bits/basic_ios.h:282: first defined h
ere
CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PostAcquireRequest.cc.o: In function `manage_small':
/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.h
pp:303: multiple definition of `typeinfo for librbd::Journal<librbd::ImageCtx>::MetadataListener'
CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-
gnueabi/boost/include/boost/function/function_base.hpp:303: first defined here
CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PostAcquireRequest.cc.o: In function `Cond::~Cond()':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/common/Cond.h:44: multiple definition of `typeinfo name for libr
bd::Journal<librbd::ImageCtx>::C_OpEventSafe'
CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librb
d/test_mock_Journal.cc:56: first defined here
CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PostAcquireRequest.cc.o: In function `manage':
/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.h
pp:399: multiple definition of `typeinfo for librbd::Journal<librbd::ImageCtx>::C_OpEventSafe'
CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-
gnueabi/boost/include/boost/function/function_base.hpp:303: first defined here
CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PostAcquireRequest.cc.o: In function `testing::Asserti
onResult::message() const':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gtest/gtest.h:298: multiple defini
tion of `typeinfo name for librbd::Journal<librbd::ImageCtx>::C_IOEventSafe'
CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/journ
al/mock/MockJournaler.h:83: first defined here
CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PostAcquireRequest.cc.o: In function `manage_small':
/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.h
pp:307: multiple definition of `typeinfo for librbd::Journal<librbd::ImageCtx>::C_IOEventSafe'
CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-
gnueabi/boost/include/boost/function/function_base.hpp:401: first defined here
CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PostAcquireRequest.cc.o: In function `testing::Asserti
onResult testing::internal::EqHelper<true>::Compare<int, int>(char const*, char const*, int const&, int const&
, testing::internal::EnableIf<!testing::internal::is_pointer<int>::value>::type*)':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gtest/gtest.h:1459: multiple defin
ition of `typeinfo name for librbd::Journal<librbd::ImageCtx>::C_ReplayProcessSafe'
CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/journ
al/mock/MockJournaler.h:58: first defined here
CMakeFiles/unittest_librbd.dir/exclusive_lock/test_mock_PostAcquireRequest.cc.o: In function `manage_small':
/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.h
```

```

pp:286: multiple definition of `typeinfo for librbd::Journal<librbd::ImageCtx>::C_ReplayProcessSafe'
CMakeFiles/unittest_librbd.dir/test_mock_Journal.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-
gnueabi/hf/boost/include/boost/function/function_base.hpp:307: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o:(.rodata+0x3418): multiple defi
nition of `typeinfo name for librbd::AsyncRequest<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:(.rodata+0x1b7c): first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `~C_StateCallbackA
dapter':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:59: multiple definition of `typeinfo for librbd::
AsyncRequest<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:155: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `rados_state_callb
ack<librbd::operation::DisableFeaturesRequest<librbd::(anonymous namespace)::MockOperationImageCtx>, &librbd::
operation::DisableFeaturesRequest<librbd::(anonymous namespace)::MockOperationImageCtx>::handle_set_features,
true>':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:38: multiple definition of `typeinfo name for lib
rbd::operation::Request<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:339: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `~C_StateCallbackA
dapter':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:59: multiple definition of `typeinfo for librbd::
operation::Request<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:155: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `rados_state_callb
ack<librbd::operation::DisableFeaturesRequest<librbd::(anonymous namespace)::MockOperationImageCtx>, &librbd::
operation::DisableFeaturesRequest<librbd::(anonymous namespace)::MockOperationImageCtx>::handle_set_features,
true>':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:43: multiple definition of `typeinfo name for lib
rbd::operation::Request<librbd::ImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:172: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `~C_CallbackAdapte
r':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:46: multiple definition of `typeinfo for librbd::
operation::Request<librbd::ImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `send_close_journa
l':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/operation/DisableFeaturesRequest.cc:351: multiple definit
ion of `typeinfo name for librbd::operation::Request<librbd::ImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googletest/include/gtest/internal/gtest-linked_ptr.h:93: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `~MonomorphicImpl'
:
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/gmock-actions.h:438: multipl
e definition of `typeinfo for librbd::operation::Request<librbd::ImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `C_StateCallbackAd
apter':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/Utils.h:62: multiple definition of `typeinfo name for lib
rbd::AsyncObjectThrottle<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:252: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_DisableFeaturesRequest.cc.o: In function `~gmock_Impl':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librbd/test_mock_fixture.h:41: multiple definition of `type
info for librbd::AsyncObjectThrottle<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:3732: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o:(.rodata+0x3020): multiple defin
ition of `typeinfo name for librbd::AsyncRequest<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:3732: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `~gmock_Impl':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librbd/test_mock_fixture.h:41: multiple definition of `type
info for librbd::AsyncRequest<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:155: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `expect_block_reque
sts':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librbd/operation/test_mock_EnableFeaturesRequest.cc:232: mu

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ltiple definition of `typeid name for librbd::operation::Request<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:339: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `~gmock_Impl':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librbd/test_mock_fixture.h:41: multiple definition of `typeid
info for librbd::operation::Request<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:155: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `testing::internal:
:MatcherBase<int>::~~MatcherBase()':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/gmock-matchers.h:294: multip
le definition of `typeid name for librbd::operation::Request<librbd::ImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:172: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `void std::__cxx11:
:basic_string<char, std::char_traits<char>, std::allocator<char> >::_M_construct<char const*>(char const*, cha
r const*, std::forward_iterator_tag)':
/usr/include/c++/5/bits/basic_string.tcc:210: multiple definition of `typeid for librbd::operation::Request<
librbd::ImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `testing::Matcher<i
nt>::~Matcher(int)':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/gmock-matchers.h:294: multip
le definition of `typeid name for librbd::operation::Request<librbd::ImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gtest/internal/gtest-linked_ptr.h:93: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `void std::__cxx11:
:basic_string<char, std::char_traits<char>, std::allocator<char> >::_M_construct<char const*>(char const*, cha
r const*, std::forward_iterator_tag)':
/usr/include/c++/5/bits/basic_string.tcc:215: multiple definition of `typeid for librbd::operation::Request<
librbd::ImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `librbd::AsyncReque
st<librbd::MockImageCtx>::finish(int)':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/librbd/AsyncRequest.h:59: multiple definition of `typeid name
for librbd::AsyncObjectThrottle<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:252: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_EnableFeaturesRequest.cc.o: In function `void std::__cxx11:
:basic_string<char, std::char_traits<char>, std::allocator<char> >::_M_construct<char const*>(char const*, cha
r const*, std::forward_iterator_tag)':
/usr/include/c++/5/bits/basic_string.tcc:221: multiple definition of `typeid for librbd::AsyncObjectThrottle
<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:3732: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_Request.cc.o:(.rodata+0x18e4): multiple definition of `type
info name for librbd::operation::Request<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:339: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_Request.cc.o: In function `finish':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/gmock-generated-function-moc
kers.h:85: multiple definition of `typeid for librbd::operation::Request<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:155: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_Request.cc.o: In function `librbd::operation::TestMockOpera
tionRequest::expect_send_op(librbd::operation::MockRequest&, int)':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/gmock-generated-function-moc
kers.h:85: multiple definition of `typeid name for librbd::operation::Request<librbd::ImageCtx>::C_CommitOpE
vent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:172: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_Request.cc.o: In function `~AsyncRequest':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/gmock-generated-function-moc
kers.h:85: multiple definition of `typeid for librbd::operation::Request<librbd::ImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_Request.cc.o: In function `testing::internal::linked_ptr<te
sting::ActionInterface<void () > >::~~linked_ptr()':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/gmock-generated-function-moc
kers.h:85: multiple definition of `typeid name for librbd::operation::Request<librbd::ImageCtx>::C_AppendOpE
vent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gtest/internal/gtest-linked_ptr.h:93: first defined here

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CMakeFiles/unittest_librbd.dir/operation/test_mock_Request.cc.o: In function `~C_CommitOpEvent':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/gmock-matchers.h:324: multiple
definition of `typeinfo for librbd::operation::Request<librbd::ImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o:(.rodata+0x3518): multiple def
inition of `typeinfo name for librbd::AsyncRequest<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:3732: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `void std::__cxx1
1::basic_string<char, std::char_traits<char>, std::allocator<char> >::_M_construct<char const*>(char const*, c
har const*, std::forward_iterator_tag)':
/usr/include/c++/5/bits/basic_string.tcc:223: multiple definition of `typeinfo for librbd::AsyncRequest<librbd
::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:155: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `testing::interna
l::linked_ptr<testing::CardinalityInterface const>::~~linked_ptr()':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gtest/internal/gtest-linked_ptr.h:
153: multiple definition of `typeinfo name for librbd::operation::Request<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:339: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `std::__cxx11::ba
sic_string<char, std::char_traits<char>, std::allocator<char> >::_M_data(char*)':
/usr/include/c++/5/bits/basic_string.h:127: multiple definition of `typeinfo for librbd::operation::Request<li
brbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:155: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `testing::interna
l::TypedExpectation<void ()>::WillOnce(testing::Action<void ()> const&)':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/gmock-spec-builders.h:1000:
multiple definition of `typeinfo name for librbd::operation::Request<librbd::ImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/libra
dos_test_stub/MockTestMemIoCtxImpl.h:172: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `std::char_traits
<char>::copy(char*, char const*, unsigned int)':
/usr/include/c++/5/bits/char_traits.h:290: multiple definition of `typeinfo for librbd::operation::Request<lib
rbd::ImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `testing::interna
l::TypedExpectation<void ()>::Times(int)':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/gmock-spec-builders.h:932: m
ultiple definition of `typeinfo name for librbd::operation::Request<librbd::ImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googletest/include/gtest/internal/gtest-linked_ptr.h:93: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `void std::__cxx1
1::basic_string<char, std::char_traits<char>, std::allocator<char> >::_M_construct<char const*>(char const*, c
har const*, std::forward_iterator_tag)':
/usr/include/c++/5/bits/basic_string.tcc:237: multiple definition of `typeinfo for librbd::operation::Request<
librbd::ImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:345: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `expect_get_curre
nt_size':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librbd/operation/test_mock_SnapshotRollbackRequest.cc:129:
multiple definition of `typeinfo name for librbd::AsyncRequest<librbd::MockImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/internal/gmock-internal-utils.h:296: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `std::__cxx11::ba
sic_string<char, std::char_traits<char>, std::allocator<char> >::_M_local_data()':
/usr/include/c++/5/bits/basic_string.h:141: multiple definition of `typeinfo for librbd::AsyncRequest<librbd::
MockImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:3732: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `testing::interna
l::Expect(bool, char const*, int, std::__cxx11::basic_string<char, std::char_traits<char>, std::allocator<char
> > const&)':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googlemock/include/gmock/internal/gmock-internal-util
s.h:296: multiple definition of `typeinfo name for librbd::AsyncObjectThrottle<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest
/googlemock/include/gmock/gmock-matchers.h:252: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `void std::__cxx1
1::basic_string<char, std::char_traits<char>, std::allocator<char> >::_M_construct_aux<char const*>(char const
*, char const*, std::__false_type)':

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/usr/include/c++/5/bits/basic_string.h:195: multiple definition of `typeinfo for librbd::AsyncObjectThrottle<librbd::ImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:3732: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `testing::internal::linked_ptr<testing::ActionInterface<unsigned long long (>> >>::linked_ptr<testing::internal::linked_ptr<testing::ActionInterface<unsigned long long (>> > const&)>':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gtest/internal/gtest-linked_ptr.h:158: multiple definition of `typeinfo name for librbd::AsyncObjectThrottle<librbd::MockImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/internal/gmock-internal-utils.h:296: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `manage':
/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.hpp:399: multiple definition of `typeinfo for librbd::AsyncObjectThrottle<librbd::MockImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gtest/internal/gtest-linked_ptr.h:93: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `testing::internal::linked_ptr<testing::ActionInterface<unsigned long long (>> >>::depart()':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gtest/internal/gtest-linked_ptr.h:205: multiple definition of `typeinfo name for librbd::operation::Request<librbd::MockImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/internal/gmock-internal-utils.h:296: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `manage':
/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.hpp:401: multiple definition of `typeinfo for librbd::operation::Request<librbd::MockImageCtx>'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:3732: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `testing::internal::MatcherBase<unsigned long long>::MatcherBase<testing::internal::MatcherBase<unsigned long long> const&)>':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:252: multiple definition of `typeinfo name for librbd::operation::Request<librbd::MockImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/internal/gmock-internal-utils.h:296: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `manage':
/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.hpp:404: multiple definition of `typeinfo for librbd::operation::Request<librbd::MockImageCtx>::C_CommitOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:328: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `expect_get_object_name':
/mnt/sdal/ceph-build/ceph-master-reloaded/src/test/librbd/operation/test_mock_SnapshotRollbackRequest.cc:124: multiple definition of `typeinfo name for librbd::operation::Request<librbd::MockImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/internal/gmock-internal-utils.h:296: first defined here
CMakeFiles/unittest_librbd.dir/operation/test_mock_SnapshotRollbackRequest.cc.o: In function `manager':
/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi/boost/include/boost/function/function_base.hpp:360: multiple definition of `typeinfo for librbd::operation::Request<librbd::MockImageCtx>::C_AppendOpEvent'
CMakeFiles/unittest_librbd.dir/test_mock_fixture.cc.o:/mnt/sdal/ceph-build/ceph-master-reloaded/src/googletest/googletest/include/gmock/gmock-matchers.h:859: first defined here
collect2: error: ld returned 1 exit status
src/test/librbd/CMakeFiles/unittest_librbd.dir/build.make:1208: recipe for target 'bin/unittest_librbd' failed
make[4]: *** [bin/unittest_librbd] Error 1
make[4]: Leaving directory '/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi'
CMakeFiles/Makefile2:15017: recipe for target 'src/test/librbd/CMakeFiles/unittest_librbd.dir/all' failed
make[3]: *** [src/test/librbd/CMakeFiles/unittest_librbd.dir/all] Error 2
make[3]: Leaving directory '/mnt/sdal/ceph-build/ceph-master-reloaded/obj-arm-linux-gnueabi'
Makefile:141: recipe for target 'all' failed
make[2]: *** [all] Error 2

```

#### #40 - 03/29/2017 11:00 AM - Kefu Chai

i think we violate the ODR in the librbd's tests, and the some of the template classes are instantiated multiple times with the same template parameters. the instantiated template classes are included by different compilation units. when we try to link them, the linker gave up at seeing multiple definitions of the same symbol.

the GCC on ARM with the default settings follows the C++ standard, and hence fails.

as the fix is not obvious to me at this moment, will take a look later on.

#### #41 - 03/29/2017 03:03 PM - Kefu Chai

- Project changed from Ceph to rbd

- Status changed from Need Review to New

- Assignee deleted (Kefu Chai)

#### #42 - 04/29/2017 06:06 PM - Kefu Chai

i am able to reproduce this issue with gcc-6.3

```
$ /usr/bin/arm-linux-gnueabi-gcc --version
arm-linux-gnueabi-gcc (Debian 6.3.0-12) 6.3.0 20170406
```

#### #43 - 04/29/2017 06:13 PM - Kefu Chai

<https://github.com/ceph/ceph/pull/14881> : the side-product of my adventure.

#### #44 - 05/01/2017 06:35 AM - Kefu Chai

i think the reason of the link failure is that some compilation units of unittest\_librbd are including the ".cc" files which have explicit template instantiation.

```
src/test/librbd/operation/test_mock_DisableFeaturesRequest.cc:#include "librbd/AsyncObjectThrottle.cc"
src/test/librbd/operation/test_mock_EnableFeaturesRequest.cc:#include "librbd/AsyncObjectThrottle.cc"
src/test/librbd/operation/test_mock_SnapshotRollbackRequest.cc:#include "librbd/AsyncObjectThrottle.cc"
src/test/librbd/test_mock_fixture.cc:#include "librbd/AsyncObjectThrottle.cc"
```

that's why we have errors like

```
multiple definition of `typeinfo name for librbd::AsyncObjectThrottle<librbd::ImageCtx>'
```

so we need to

1. move the explicit template instantiations out of .cc file, or
2. move the template implementation code out of the .cc file, and let the tests include the file which implements the template class.

**#45 - 05/01/2017 07:47 AM - Kefu Chai**

- Status changed from New to Need Review

- Assignee set to Kefu Chai

<https://github.com/ceph/ceph/pull/14891>

**#46 - 05/04/2017 02:46 AM - Kefu Chai**

the reason why we only need to guard

```
template class librbd::AsyncObjectThrottle<librbd::ImageCtx>;
template class librbd::Journal<librbd::ImageCtx>;
template class librbd::operation::DisableFeaturesRequest<librbd::ImageCtx>;
template class librbd::operation::Request<librbd::ImageCtx>;
```

is that all the template classes above have "key function"[1,2], and it is required<sup>3</sup> to emit type\_info as a strong symbol with key function to comply to ARM's C++ ABI spec<sup>2</sup>.

quote from ARM's ABI spec<sup>2</sup>:

These std::type\_info functions should not be inline by default, as doing so makes the relocatable file platform- specific. A C++ system must provide an option or default (Q-o-l) to force them out of line.

this practically requires that we need to enforce ODR when it comes to type\_info on ARM and platforms<sup>4</sup> that does not have weak symbols. but this is not required on all other C++ ABIs. take Itanium for example, it's allowed to be put into COMDAT<sup>5</sup>. clang's source code<sup>6</sup> is a good references.

And we are not alone, see [7].

---

[1] <https://itanium-cxx-abi.github.io/cxx-abi/abi.html#vague-vtable>

[2] [http://infocenter.arm.com/help/topic/com.arm.doc.ih10041e/IHI0041E\\_cppabi.pdf](http://infocenter.arm.com/help/topic/com.arm.doc.ih10041e/IHI0041E_cppabi.pdf)

[3] <https://libcxxabi.llvm.org>, search for "Frequently asked questions"

[4] <https://gcc.gnu.org/ml/gcc/2001-01/msg01487.html>

[5] <https://itanium-cxx-abi.github.io/cxx-abi/abi.html#vague-rtti>

[6] <https://github.com/llvm-mirror/clang/blob/master/include/clang/Basic/TargetCXXABI.h#L255>

[7] <https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=608029>



#47 - 05/04/2017 03:14 PM - Kefu Chai

- Status changed from Need Review to Resolved

#48 - 05/05/2017 09:07 PM - Sebastien Luttringer

Hello Kefu,

I applied <https://github.com/ceph/ceph/pull/14891.patch> to ceph 11.2.0 tarball and that doesn't fix building on i686.

```
[ 5%] Building CXX object src/CMakeFiles/common_util_obj.dir/common/util.cc.o
In file included from /build/ceph/src/ceph-11.2.0/src/include/encoding.h:25:0,
                 from /build/ceph/src/ceph-11.2.0/src/include/uuid.h:8,
                 from /build/ceph/src/ceph-11.2.0/src/include/types.h:21,
                 from /build/ceph/src/ceph-11.2.0/src/msg/Message.h:26,
                 from /build/ceph/src/ceph-11.2.0/src/msg/Messenger.h:23,
                 from /build/ceph/src/ceph-11.2.0/src/osdc/ObjectCacher.cc:6:
/build/ceph/src/ceph-11.2.0/src/include/denc.h: In instantiation of 'typename std::enable_if<((traits:: supported == 1) && (! traits:: featured))>::type decode_nohead(size_t, T&, ceph::buffer::list::iterator&) [with T = std::__cxx11::basic_string<char>; traits = denc_traits<std::__cxx11::basic_string<char> >; typename std::enable_if<((traits:: supported == 1) && (! traits:: featured))>::type = void; size_t = unsigned int]':
/build/ceph/src/ceph-11.2.0/src/messages/MOSDOp.h:397:41:   required from here
/build/ceph/src/ceph-11.2.0/src/include/denc.h:1337:24: error: 'decode_nohead' is not a member of 'denc_traits<std::__cxx11::basic_string<char> >'
    traits::decode_nohead(num, o, cp);
    ~~~~~^~~~~~
make[2]: *** [src/osdc/CMakeFiles/osdc_rbd_objs.dir/build.make:63: src/osdc/CMakeFiles/osdc_rbd_objs.dir/ObjectCacher.cc.o] Error
or 1
make[1]: *** [CMakeFiles/Makefile2:2805: src/osdc/CMakeFiles/osdc_rbd_objs.dir/all] Error 2
make[1]: *** Waiting for unfinished jobs....
[ 5%] Building CXX object src/CMakeFiles/mon_common_objs.dir/auth/cephx/CephxSessionHandler.cc.o
[ 5%] Building CXX object src/CMakeFiles/mon_common_objs.dir/erasure-code/ErasurceCodePlugin.cc.o
[ 5%] Built target common_util_obj
[ 5%] Building CXX object src/json_spirit/CMakeFiles/json_spirit.dir/json_spirit_writer.cpp.o
[ 5%] Built target mon_common_objs
[ 5%] Linking CXX static library ../../lib/libjson_spirit.a
[ 5%] Built target json_spirit
make: *** [Makefile:141: all] Error 2
```

**#49 - 12/08/2017 10:37 AM - Kefu Chai**

- *Status changed from Resolved to New*

Sorry, Sebastien ! i missed your latest comment. seems i fixed the issue reported by Romain, but not yours. i am reopening this ticket.

**#50 - 12/15/2017 01:26 AM - Jason Dillaman**

- *Status changed from New to Won't Fix*

Closing since 11.x.y is an EOLed release.