***虚机热迁移失败引起磁盘映射错误问题分析***

# Nova虚机热迁移代码逻辑分析

热迁移代码逻辑为位于：

compute/manager.py ComputeManager：\_do\_live\_migration

该接口主要做了三件事：

***步骤1***：调用pre\_live\_migration，该方法在迁移的目标节点创建块设备的连接信息，并且持久化到数据库。**问题的根本原因也就是该步操作没有被彻底回滚。**

***步骤2***：调用libvirt驱动的live\_migration接口，该接口进行迁移操作。

***步骤3***：由于上述两个步骤都有可能发生错误，因此\_rollback\_live\_migration接口被用来回滚。步骤1发生的错误会直接以try/except的方式被捕获，然后执行回滚。步骤2中\_rollback\_live\_migration以回调函数的形式被调用。

def \_do\_live\_migration(self, context, dest, instance, block\_migration, migration, migrate\_data):

......

try:

......

migrate\_data = self.compute\_rpcapi.pre\_live\_migration(

context, instance,

block\_migration, disk, dest, migrate\_data)

except Exception:

with excutils.save\_and\_reraise\_exception():

self.\_set\_migration\_status(migration, 'error')

self.\_rollback\_live\_migration(context, instance, dest,

migrate\_data)

try:

self.driver.live\_migration(context, instance, dest,

self.\_post\_live\_migration,

self.\_rollback\_live\_migration,

block\_migration, migrate\_data)

except Exception:

with excutils.save\_and\_reraise\_exception():

self.\_set\_migration\_status(migration, 'error')

instance.refresh()

self.\_set\_instance\_obj\_error\_state(context, instance, clean\_task\_state=True)

# 修改方案

根据分析，问题根因是\_rollback\_live\_migration接口回滚不彻底，没有回滚数据库中block\_device\_mapping表的connection\_info字段。因此解决方案是在该接口内补上这一个操作：

@wrap\_exception()

@wrap\_instance\_fault

def \_rollback\_live\_migration(self, context, instance,

dest, migrate\_data=None,

migration\_status='error'):

.....

# add by ruijie

# refreshing the connection\_info of attached volume

# while live migration failed

try:

self.\_get\_instance\_block\_device\_info(context, instance,

refresh\_conn\_info=True,

bdms=bdms)

except Exception:

with excutils.save\_and\_reraise\_exception():

LOG.exception(\_LE('An error occurred refreshing the '

'connection\_info of attached volumes while '

'rolling back a live migration attempt'),

instance=instance)

# end

......

\_get\_instance\_block\_device\_info接口会在宿主机重新向Cinder请求volume的连接信息之后将信息刷新到数据库！