Solution to the "modprobe: FATAL: Module drbd not found " error in Linux RHEL with kernel level 957 with IBM MQ RDQM (Replicated Data Queue Manager).

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Published on 05/08/2019 / *Updated on 05/08/2019*

Summary:
When user installed IBM MQ 91 GA Replicated Data queue manager on the Linux RHEL 7.4 or later versions with kernel level is 957, user may face the problem while configuring RDQM HA setup. Most of the time RDQM queue manager fails to create with exceptions. This happens Mostly the problem is with DRBD setup.

User Scenario:

1. First run the "hostnamectl" on the Linux RHEL machine to know the RHEL version and the kernel level

[root@LinuxRHEL91 RDQM]# hostnamectl
Static hostname: LinuxRHEL91.fyre.ibm.com
Icon name: computer-vm
Chassis: vm
Machine ID: e57cfe9136e9430587366e04f14195e1
Boot ID: 2155c98a2aa8433c984d1679b4796e98
Virtualization: kvm
Operating System: Red Hat Enterprise Linux Server 7.5 (Maipo)
CPE OS Name: cpe:/o:redhat:enterprise_linux:7.5:GA:server
Kernel: Linux 3.10.0-957.12.1.el7.x86_64
Architecture: x86-64

2. Install IBM MQ 9.1 GA + RDQM (Replicated Data Queue Manager) , Upgrade the MQ and RDQM to MQ 9.1.0.1 (this is optional)

```
[root@LinuxRHEL91 ~]# dspmqver
Name:        IBM MQ
Version:     9.1.0.0
Level:       p910-L180705
BuildType:   IKAP - (Production)
Platform:    IBM MQ for Linux (x86-64 platform)
Mode:        64-bit
O/S:         Linux 3.10.0-957.12.1.el7.x86_64
InstName:    Installation1
InstDesc:
Primary:     Yes
InstPath:    /opt/mqm
DataPath:    /var/mqm
MaxCmdLevel: 910
LicenseType: Production
```

3. Run dspmqver / dspmqver -a , check for RDQM component version, kmod-drbd and pacemaker component version

```
Name:        IBM MQ Replicated Data Queue Managers
Version:     9.1.0.0
Level:       p910-L180705
BuildType:   IKAP - (Production)

Name:        IBM MQ Managed File Transfer
Version:     9.1.0.0
Level:       p910-L180705
Build Type:  Production

Name:        libCurl
Version:     libcurl/7.60.0 GSKit 8.0.50.89
Location:    file:/opt/mqm/lib64/libcurl.so

Name:        libedit
Version:     libedit 0:56:0 (20170329-3.1)
Location:    file:/opt/mqm/lib64/libedit.so

Name:        kmod-drbd
Version:     kmod-drbd-9.0.14_3.10.0_862-1.el7.x86_64

Name:        drbd-utils
Version:     drbd-utils-9.3.1-1.el7.x86_64

Name:        pacemaker
Version:     pacemaker-1.1.15.linbit-2.0+20160622+e174ec8.el7.x86_64
```

4. Run the command: modprobe drbd if it returns the message saying modprobe: FATAL: Module drbd not found, it means the drbd setup is not proper on the node. This command should be run on all the 3 nodes to ensure that the DRBD installation is proper.

If DRBD setup is not proper, then modprobe command give the below output. If modprobe command does not give any output, then it means the setup is proper.

```
[root@LinuxRHEL91 RDQM]#
[root@LinuxRHEL91 RDQM]#  modprobe drbd
modprobe: FATAL: Module drbd not found.
[root@LinuxRHEL91 RDQM]#
```

The drbd packages supplied with IBM MQ 9.1 GA / IBM MQ 9.1.0.1 Fix Pack is kmod-drbd-9.0.14_3.10.0_862-1.el7.x86_64.rpm whereas Linux version can be RHEL 7.4 and onward and kernel level might be Linux 3.10.0-957.12.1.el7.x86_64. To know the machine kernel level, run the command "hostnamectl"

```
[root@LinuxRHEL91 Advanced]# hostnamectl
   Static hostname: LinuxRHEL91.fyre.ibm.com
         Icon name: computer-vm
           Chassis: vm
        Machine ID: e57cfe9136e9430587366e04f14195e1
           Boot ID: 2155c98a2aa8433c984d1679b4796e98
    Virtualization: kvm
  Operating System: Red Hat Enterprise Linux Server 7.5 (Maipo)
       CPE OS Name: cpe:/o:redhat:enterprise_linux:7.5:GA:server
            Kernel: Linux 3.10.0-957.12.1.el7.x86_64
      Architecture: x86-64
[root@LinuxRHEL91 Advanced]#
```

If this modprobe drbd is throwing error, then user might not be able to configure the RDQM HA Set up. While creating or starting the queue manager and the machine where modprobe is not working Replicated QM is not getting created.

Good Practice: Once the user installs the IBM MQ 9.1 GA + RDQM support, it is better to run the modprobe command on all the nodes and ensure that it does not give any fatal error.

Solution : Upgrade the IBM MQ 9.1 GA / IBM MQ 9.1.0.1 Fix Pack to IBM MQ 9.1.0.2 RDQM support. And check the kmod-drbd version is upgraded to "kmod-drbd-9.0.14_3.10.0_957-1.el7.x86_64 "

```
Name:         IBM MQ Replicated Data Queue Managers
Version:      9.1.0.1
Level:        p910-001-181108
BuildType:    IKAP - (Production)

Name:         IBM MQ Managed File Transfer
Version:      9.1.0.1
Level:        p910-001-181108
Build Type:   Production

Name:         libCurl
Version:      libcurl/7.61.0 GSKit 8.0.55.2
Location:     file:/opt/mqm/lib64/libcurl.so

Name:         libedit
Version:      libedit 0:58:0 (20180525-3.1)
Location:     file:/opt/mqm/lib64/libedit.so

Name:         kmod-drbd
Version:      kmod-drbd-9.0.14_3.10.0_957-1.el7.x86_64

Name:         drbd-utils
Version:      drbd-utils-9.3.1-1.el7.x86_64

Name:         pacemaker
Version:      pacemaker-1.1.15.linbit-2.0+20160622+el74ec8.el7.x86_64
```

After upgrading the RDQM to IBM MQ 9.1.0.2, run the modprobe drbd command.
Modprobe drbd command should not return any error message across all the nodes.

```
[root@LinuxRHEL91 RDQM]# modprobe drbd
[root@LinuxRHEL91 RDQM]#
```

Now you are ready to start the RDQM Queue managers.

References:
https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_9.1.0/com.ibm.mq.ins.doc/q130
560_.htm
https://www.ibm.com/support/knowledgecenter/SSFKSJ_9.1.0/com.ibm.mq.con.doc/q13031
0_.htm

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