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IBM MQ HA and DR

Project Name: IBM MQ Installation and Configuration MQ v8 or v7.5 HA and DR Document

Technical Architect: Chuck Misuraca

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Revision Log

Release No.	Date	Revision Description	Name
1	5/04/2016	Initial Documentation	C. Misuraca

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Purpose

The purpose of this document is to provide a cookbook level instructions on installing IBM MQ v8 or V7.5 in a multi-instance configuration with a second Standby as the DR site. The big win on this approach is that linear logging is not required but is an option.

This document is a supplement to any official document that IBM has provided on the topic of IBM MQ Multi-instance installation and configuration. Official documents on this subject from IBM can be obtained on the Info Center for the specific version of MQ.

For the Multi-instance topology, the mqm user and groups needs to be added to each server that MQ will run on. The Multi-instance each environment will consist of 2 machines. The 2 machines will have a common NFS v4 mount point. Th NFS v4 filesystem will also be common to the DR site.

For production the disaster recovery configurion is listed in Figure 1.
Basically a DR Queue Manager is configured as an second standby instance Queue Manager to the MQ HA pair. The NFS v4 file system acts as a backup and restore point for the DR Queue Manager(Qmgr). **The MQ HA pair and DR Qmgr CANNOT run at the same time.** **DR Qmgr can only be started when the MQ HA pair are down. The MQ HA pair can only be running while the DRQmgr is stopped.**

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Combining HA and DR

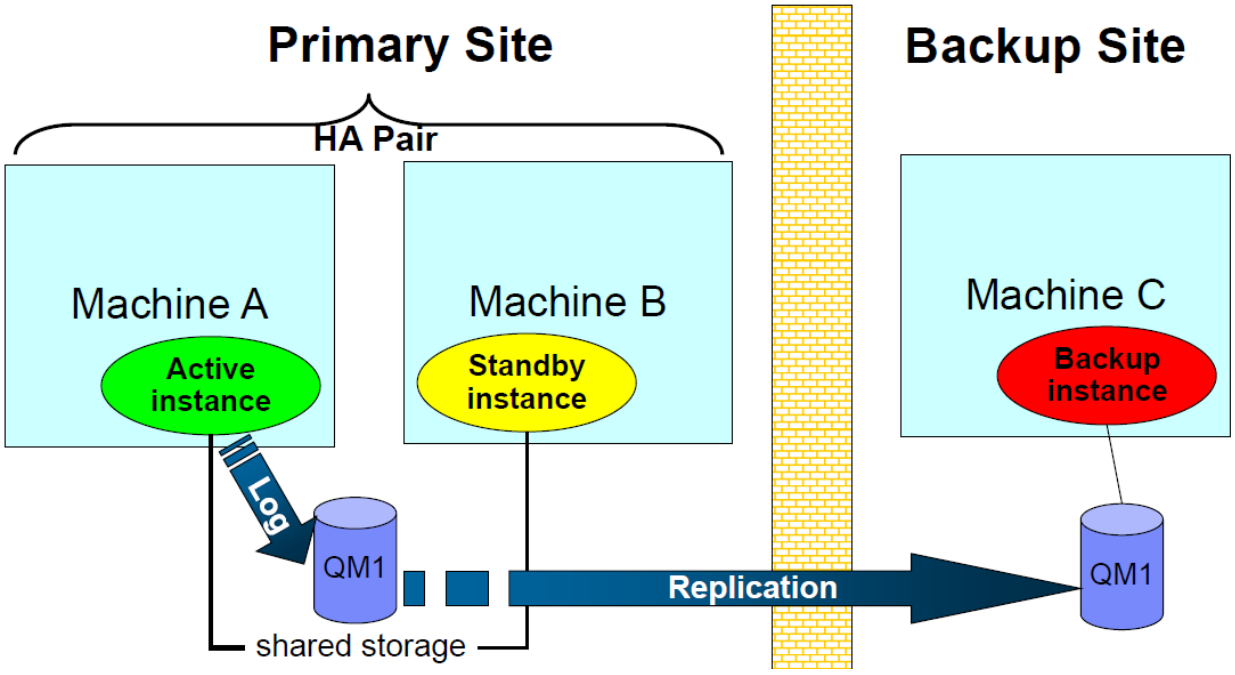

Figure 1 – MQ HA with DR.

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MQ Installation - Linux

Prerequisites

- All pre-reqs listed in the IBM MQ Info Center must be met.

Installation Multi-instance MQ

Reqiurements for this section:

- mqm ID and group on all three machines
- NFS v4 mounted to all three machines
- MQ install media on a centeral location for **all three machines**

Installation of MQ

1. **Run as ROOT**
2. **Untar the IBM MQ install media.**
3. Run the license script: ./mqlicense.sh –accept
4. Install RPMs: **rpm -ivh MQSeries*.rpm**
5. check /tmp/mqconfig.######.log for errors or warnings.

6. Run the config varication check to ensure all settings are as they should be: **su mqm -c "/opt/mqm/bin/mqconfig"**
    i. This script will call out each setting as it currently is, what it expects and whether it the current setting is acceptable. Fix things accordingly.
7. /opt/mqm/bin/setmqinst -i -p /opt/app/mqm

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Configure MQ Multi-instance

Create primary Queue Manager.

On Machine A

1. As mqm
2. cd /opt/mqm/bin
3. RUN: ./crtmqm -lc -ld /mnt/mqm/<QMGRNAME>/logs -md /mnt/mqm/<QMGRNAME>/data -u <QMGRNAME>.DLQ <QMGRNAME>
   Results:

```
WebSphere MQ queue manager created.
Directory ' /mnt/mqm/<QMGRNAME>/data/<QMGRNAME>' created.
The queue manager is associated with installation 'Installation1'.
Creating or replacing default objects for queue manager '<QMGRNAME>'.
Default objects statistics : 79 created. 0 replaced. 0 failed.
Completing setup.
Setup completed.
```

4. RUN: ./dspmqinf -o command <QMGRNAME>
   Results:

```
addmqinf -s QueueManager -v Name=<QMGRNAME> -v
Directory=<QMGRNAME> -v Prefix=/var/mqm -v
DataPath=/mnt/mqm/<QMGRNAME>/data/<QMGRNAME>
```

5. Copy output to clipboard. **This will be used for DR machine also.**

Add standby Queue Manager.

On Machine B

6. As mqm
7. cd /opt/mqm/bin
8. RUN: addmqinf -s QueueManager -v Name=<QMGRNAME> -v Directory=<QMGRNAME> -v Prefix=/var/mqm -v DataPath=/mnt/mqm/<QMGRNAME>/data/<QMGRNAME>

Add a second standby Queue Manager.

On Machine DR

9. As mqm
10. cd /opt/mqm/bin
11. RUN: addmqinf -s QueueManager -v Name=<QMGRNAME> -v Directory=<QMGRNAME> -v Prefix=/var/mqm -v DataPath=/mnt/mqm/<QMGRNAME>/data/<QMGRNAME>

12. Start the queue manager instances on **On Machine A**, then **On Machine B** , with the -x parameter.
    EXAMPLE:
    strmqm -x <QMGRNAME>

13. The **On Machine A** will be the primary QMgr. **On Machine B** will be the standby QMgr
14. Test By, create some persistant queue and put messages on them.

Verify failover

15. Fail over primary QMgr to standby QMgr.
    a. cd /opt/mqm/bin
    b. RUN: ./endmqm –s <QMGRNAME> - on Primary
    c. RUN: echo “dis ql(*) CURDEPTH” | runmqsc <QMGRNAME>

NOTE: you will see all the queue and there current depth from Step 14.

16. Shutdown standby Qmgrs.
    a. cd /opt/mqm/bin
    b. RUN: ./endmqm –x <QMGRNAME> - on Standby
    c. RUN: echo “dis ql(*) CURDEPTH” | runmqsc <QMGRNAME>

NOTE: you will see all the queue and there current depth from Step 14.

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17. Shutdown primary and standby Qmgrs.
    a. cd /opt/mqm/bin
    b. RUN: ./endmqm –i <QMGRNAME> - on Primary
    c. RUN: echo “dis ql(*) CURDEPTH” | runmqsc <QMGRNAME>

NOTE: you will see all the queue and there current depth from Step 14.

Verfiy DR

18. Shutdown primary and standby Qmgrs.
    a. cd /opt/mqm/bin
    b. RUN: ./endmqm –i <QMGRNAME> - on Primary
19. Start DR Qmgrs.
    a. Logon to DR
    b. su to mqm
    c. cd /opt/mqm/bin
    d. RUN: ./strmqm <QMGRNAME>
    e. RUN: echo “dis ql(*) CURDEPTH” | runmqsc <QMGRNAME>

NOTE: you will see all the queue and there current depth from Step 14.

20. Shuttdown DR Qmgr
    a. ./endmqm -i <QMGRNAME>
21. Re-start HA pair
    a. RUN: ./strmqm –x <QMGRNAME> - on Primary
    b. RUN: ./strmqm –x <QMGRNAME> - on Secondary