**DB2 V10.1 HADR快速部署手册**

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关于DB2 HADR就不做多的解释了，和oracle的DataGuard类似  
这里记录一下平时实验的一个快速部署手册

CentOS6.5 x64位

192.168.122.101 kvm110

192.168.122.102 kvm111

目录准备

1. mkdir -p /home/db2inst2/db2\_backup
2. mkdir -p /home/db2inst2/db2\_archive
3. mkdir -p /home/db2inst2/db2\_log
5. chmod -R 775 /home/db2inst2/db2\_backup
6. chmod -R 775 /home/db2inst2/db2\_archive
7. chmod -R 775 /home/db2inst2/db2\_log
9. chown -R db2inst2:db2iadm2 /home/db2inst2/db2\_backup
10. chown -R db2inst2:db2iadm2 /home/db2inst2/db2\_archive
11. chown -R db2inst2:db2iadm2 /home/db2inst2/db2\_log

安装db2-略  
  
创建测试库

db2 create db hadb01

下面新增一些数据，只在主库添加：

1. db2 connect to hadb01
2. db2 "create table t1(id int)"
3. db2 "insert into t1 values(1)"
4. db2 "insert into t1 values(2)"
6. db2 "create table t2(id int)"
7. db2 "insert into t2 values(1)"
8. db2 "insert into t2 values(2)"

开启归档模式

主库和备库都操作

先修改归档参数，做离线备份，重启数据库后，手工测试归档

点击(此处)折叠或打开

1. db2 update db cfg for hadb01 using logarchmeth1 disk:/home/db2inst2/db2\_archive/
2. db2 update db cfg for hadb01 using NEWLOGPATH /home/db2inst2/db2\_log
4. db2 force applications all
5. db2 backup db hadb01 to /home/db2inst2/db2\_backup/
6. db2stop force;db2start
7. db2 archive log for db hadb01

备库:

1. db2 update db cfg for hadb01 using logarchmeth1 disk:/home/db2inst2/db2\_archive/
2. db2 update db cfg for hadb01 using NEWLOGPATH /home/db2inst2/db2\_log
4. db2 force applications all
5. db2 backup db hadb01 to /home/db2inst2/db2\_backup/
6. db2stop force;db2start
7. db2 archive log for db hadb01

**主库离线全备份**

1. db2 backup database hadb01 to /home/db2inst2/db2\_backup
2. scp /home/db2inst2/db2\_backup/hadb01.0.db2inst2.NODE0000.CATN0000.20150522091531.001 db2inst2@192.168.122.102:/home/db2inst2/db2\_backup/

**备库还原数据**

1. [db2inst2@kvm111 ~]$ db2 restore database hadb01 from "/home/db2inst2/db2\_backup" taken at 20150522091531 replace history file
2. SQL2523W Warning! Restoring to an existing database that is different from
3. the database on the backup image, but have matching names. The target database
4. will be overwritten by the backup version. The Roll-forward recovery logs
5. associated with the target database will be deleted.
6. Do you want to continue ? (y/n) y
7. DB20000I The RESTORE DATABASE command completed successfully.

**服务和端口配置**

配置HADR服务 **主备**都设置

vi /etc/services加入

点击(此处)折叠或打开

1. DB2\_HADR\_1 55110/tcp
2. DB2\_HADR\_2 55111/tcp

后面加入了两行,用于配置下面的HADR\_REMOTE\_SVC

注意有没有和已有的端口冲突

主备参数配置

**主库参数配置**

1. db2 get db cfg for hadb01 | grep -i HADR
2. db2 update db cfg for hadb01 using HADR\_LOCAL\_HOST 192.168.122.101
3. db2 update db cfg for hadb01 using HADR\_LOCAL\_SVC DB2\_HADR\_1
5. db2 update db cfg for hadb01 using HADR\_REMOTE\_HOST 192.168.122.102
6. db2 update db cfg for hadb01 using HADR\_REMOTE\_SVC DB2\_HADR\_2
7. db2 update db cfg for hadb01 using HADR\_REMOTE\_INST db2inst2
9. db2 update db cfg for hadb01 using HADR\_SYNCMODE NEARSYNC
10. db2 update db cfg for hadb01 using HADR\_TIMEOUT 120
11. db2 get db cfg for hadb01 | grep -i HADR

执行前：

1. [db2inst2@kvm110 ~]$ db2 get db cfg for hadb01 | grep -i HADR
2. HADR database role = STANDARD
3. HADR local host name (HADR\_LOCAL\_HOST) =
4. HADR local service name (HADR\_LOCAL\_SVC) =
5. HADR remote host name (HADR\_REMOTE\_HOST) =
6. HADR remote service name (HADR\_REMOTE\_SVC) =
7. HADR instance name of remote server (HADR\_REMOTE\_INST) =
8. HADR timeout value (HADR\_TIMEOUT) = 120
9. HADR log write synchronization mode (HADR\_SYNCMODE) = NEARSYNC
10. HADR peer window duration (seconds) (HADR\_PEER\_WINDOW) = 0

执行后：

1. [db2inst2@kvm110 ~]$ db2 get db cfg for hadb01 | grep -i HADR
2. HADR database role = STANDARD
3. HADR local host name (HADR\_LOCAL\_HOST) = 192.168.122.101
4. HADR local service name (HADR\_LOCAL\_SVC) = DB2\_HADR\_1
5. HADR remote host name (HADR\_REMOTE\_HOST) = 192.168.122.102
6. HADR remote service name (HADR\_REMOTE\_SVC) = DB2\_HADR\_2
7. HADR instance name of remote server (HADR\_REMOTE\_INST) = db2inst2
8. HADR timeout value (HADR\_TIMEOUT) = 120
9. HADR log write synchronization mode (HADR\_SYNCMODE) = NEARSYNC
10. HADR peer window duration (seconds) (HADR\_PEER\_WINDOW) = 0

**备库参数配置**

1. db2 get db cfg for hadb01 | grep -i HADR
2. db2 update db cfg for hadb01 using HADR\_LOCAL\_HOST 192.168.122.102
3. db2 update db cfg for hadb01 using HADR\_LOCAL\_SVC DB2\_HADR\_2
5. db2 update db cfg for hadb01 using HADR\_REMOTE\_HOST 192.168.122.101
6. db2 update db cfg for hadb01 using HADR\_REMOTE\_SVC DB2\_HADR\_1
7. db2 update db cfg for hadb01 using HADR\_REMOTE\_INST db2inst2
9. db2 update db cfg for hadb01 using HADR\_SYNCMODE NEARSYNC
10. db2 update db cfg for hadb01 using HADR\_TIMEOUT 120
11. db2 get db cfg for hadb01 | grep -i HADR

执行后：

1. [db2inst2@kvm111 ~]$ db2 get db cfg for hadb01 | grep -i HADR
2. HADR database role = STANDARD
3. HADR local host name (HADR\_LOCAL\_HOST) = 192.168.122.102
4. HADR local service name (HADR\_LOCAL\_SVC) = DB2\_HADR\_2
5. HADR remote host name (HADR\_REMOTE\_HOST) = 192.168.122.101
6. HADR remote service name (HADR\_REMOTE\_SVC) = DB2\_HADR\_1
7. HADR instance name of remote server (HADR\_REMOTE\_INST) = db2inst2
8. HADR timeout value (HADR\_TIMEOUT) = 120
9. HADR log write synchronization mode (HADR\_SYNCMODE) = NEARSYNC
10. HADR peer window duration (seconds) (HADR\_PEER\_WINDOW) = 0

**启动HADR**

**先启动备库**

**standby端的数据库通过primary端的数据库恢复来,恢复后必须是roll forward-pending状态，restore中不能使用without rolling forward，启动备库之前先确定这个状态**

[db2inst2@kvm111 ~]$ db2 get db cfg for hadb01 | grep Rollforward

 Rollforward pending                                     = DATABASE

相比于主库:

[db2inst2@kvm110 ~]$ db2 get db cfg for hadb01 | grep Rollforward

 Rollforward pending                                     = NO

启动备库

db2 start hadr on database hadb01 as standby

[db2inst2@kvm111 ~]$ db2 start hadr on database hadb01 as standby

SQL1766W  The command completed successfully. However, LOGINDEXBUILD was not

enabled before HADR was started.

查看HADR状态-目前只有备库，状态是disconnected

1. [db2inst2@kvm102 ~]$ db2 get snapshot for db on hadb01 | grep -A 15 "HADR Status"
2. HADR Status
3. Role = Standby
4. State = Remote catchup pending
5. Synchronization mode = Nearsync
6. Connection status = Disconnected, 12/17/2015 00:57:27.251629
7. Heartbeats missed = 0
8. Local host = 192.168.122.102
9. Local service = DB2\_HADR\_2
10. Remote host = 192.168.122.101
11. Remote service = DB2\_HADR\_1
12. Remote instance = db2inst2
13. timeout(seconds) = 120
14. Primary log position(file, page, LSN) = S0000000.LOG, 0, 0000000000000000
15. Standby log position(file, page, LSN) = S0000002.LOG, 0, 000000000366BA41
16. Log gap running average(bytes) = 0
18. [db2inst2@kvm102 ~]$ db2pd -d hadb01 -hadr
20. Database Member 0 -- Database HADB01 -- Standby -- Up 0 days 00:04:42 -- Date 2015-12-17-01.02.08.288233
22. HADR\_ROLE = STANDBY
23. REPLAY\_TYPE = PHYSICAL
24. HADR\_SYNCMODE = NEARSYNC
25. STANDBY\_ID = 0
26. LOG\_STREAM\_ID = 0
27. HADR\_STATE = REMOTE\_CATCHUP\_PENDING
28. PRIMARY\_MEMBER\_HOST =
29. PRIMARY\_INSTANCE =
30. PRIMARY\_MEMBER = 0
31. STANDBY\_MEMBER\_HOST = 192.168.122.102
32. STANDBY\_INSTANCE = db2inst2
33. STANDBY\_MEMBER = 0
34. HADR\_CONNECT\_STATUS = DISCONNECTED
35. HADR\_CONNECT\_STATUS\_TIME = 12/17/2015 00:57:27.251629 (1450285047)
36. HEARTBEAT\_INTERVAL(seconds) = 30
37. HADR\_TIMEOUT(seconds) = 120
38. TIME\_SINCE\_LAST\_RECV(seconds) = 0
39. SOCK\_SEND\_BUF\_REQUESTED,ACTUAL(bytes) = 0, 16384
40. SOCK\_RECV\_BUF\_REQUESTED,ACTUAL(bytes) = 0, 87380
41. PRIMARY\_LOG\_FILE,PAGE,POS = S0000000.LOG, 0, 0
42. STANDBY\_LOG\_FILE,PAGE,POS = S0000002.LOG, 0, 57064001
43. HADR\_LOG\_GAP(bytes) = 0
44. STANDBY\_REPLAY\_LOG\_FILE,PAGE,POS = S0000002.LOG, 0, 57064001
45. STANDBY\_RECV\_REPLAY\_GAP(bytes) = 0
46. PRIMARY\_LOG\_TIME = NULL
47. STANDBY\_LOG\_TIME = 12/17/2015 00:22:15.000000 (1450282935)
48. STANDBY\_REPLAY\_LOG\_TIME = 12/17/2015 00:22:15.000000 (1450282935)
49. STANDBY\_RECV\_BUF\_SIZE(pages) = 16
50. STANDBY\_RECV\_BUF\_PERCENT = 0
51. STANDBY\_SPOOL\_LIMIT(pages) = 0
52. PEER\_WINDOW(seconds) = 0
53. READS\_ON\_STANDBY\_ENABLED = N

**启动主库**

1. db2 deactivate database hadb01
2. db2 start hadr on database hadb01 as primary

**状态**

1. [db2inst2@kvm101 ~]$ db2 get snapshot for db on hadb01 | grep -A 15 "HADR Status"
2. HADR Status
3. Role = Primary
4. State = Peer
5. Synchronization mode = Nearsync
6. Connection status = Connected, 12/17/2015 01:03:31.996832
7. Heartbeats missed = 0
8. Local host = 192.168.122.101
9. Local service = DB2\_HADR\_1
10. Remote host = 192.168.122.102
11. Remote service = DB2\_HADR\_2
12. Remote instance = db2inst2
13. timeout(seconds) = 120
14. Primary log position(file, page, LSN) = S0000002.LOG, 0, 000000000366BA41
15. Standby log position(file, page, LSN) = S0000002.LOG, 0, 000000000366BA41
16. Log gap running average(bytes) = 0
18. [db2inst2@kvm101 ~]$
19. [db2inst2@kvm101 ~]$ db2pd -d hadb01 -hadr
21. Database Member 0 -- Database HADB01 -- Active -- Up 0 days 00:01:30 -- Date 2015-12-17-01.04.59.855546
23. HADR\_ROLE = PRIMARY
24. REPLAY\_TYPE = PHYSICAL
25. HADR\_SYNCMODE = NEARSYNC
26. STANDBY\_ID = 1
27. LOG\_STREAM\_ID = 0
28. HADR\_STATE = PEER
29. PRIMARY\_MEMBER\_HOST = 192.168.122.101
30. PRIMARY\_INSTANCE = db2inst2
31. PRIMARY\_MEMBER = 0
32. STANDBY\_MEMBER\_HOST = 192.168.122.102
33. STANDBY\_INSTANCE = db2inst2
34. STANDBY\_MEMBER = 0
35. HADR\_CONNECT\_STATUS = CONNECTED
36. HADR\_CONNECT\_STATUS\_TIME = 12/17/2015 01:03:31.996832 (1450285411)
37. HEARTBEAT\_INTERVAL(seconds) = 30
38. HADR\_TIMEOUT(seconds) = 120
39. TIME\_SINCE\_LAST\_RECV(seconds) = 27
40. PEER\_WAIT\_LIMIT(seconds) = 0
41. LOG\_HADR\_WAIT\_CUR(seconds) = 0.000
42. LOG\_HADR\_WAIT\_RECENT\_AVG(seconds) = 0.000000
43. LOG\_HADR\_WAIT\_ACCUMULATED(seconds) = 0.000
44. LOG\_HADR\_WAIT\_COUNT = 0
45. SOCK\_SEND\_BUF\_REQUESTED,ACTUAL(bytes) = 0, 19800
46. SOCK\_RECV\_BUF\_REQUESTED,ACTUAL(bytes) = 0, 87380
47. PRIMARY\_LOG\_FILE,PAGE,POS = S0000002.LOG, 0, 57064001
48. STANDBY\_LOG\_FILE,PAGE,POS = S0000002.LOG, 0, 57064001
49. HADR\_LOG\_GAP(bytes) = 0
50. STANDBY\_REPLAY\_LOG\_FILE,PAGE,POS = S0000002.LOG, 0, 57064001
51. STANDBY\_RECV\_REPLAY\_GAP(bytes) = 0
52. PRIMARY\_LOG\_TIME = 12/17/2015 00:34:24.000000 (1450283664)
53. STANDBY\_LOG\_TIME = 12/17/2015 00:34:24.000000 (1450283664)
54. STANDBY\_REPLAY\_LOG\_TIME = 12/17/2015 00:34:24.000000 (1450283664)
55. STANDBY\_RECV\_BUF\_SIZE(pages) = 512
56. STANDBY\_RECV\_BUF\_PERCENT = 0
57. STANDBY\_SPOOL\_LIMIT(pages) = 0
58. PEER\_WINDOW(seconds) = 0
59. READS\_ON\_STANDBY\_ENABLED = N

现在主库和备库已经建立连接，HADR实验环境部署完成