ORACLE 11G AUTOMATIC DIAGNOSTIC REPOSITORY - PART 2

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PACKAGE THE INCIDENT OR INCPKG DIRECTORY

Whenever critical errors are reported in the database, an incident is automatically created. Oracle collects lots of diagnostic data in the form of Trace and dump files in ADR, which may need to be sent to Oracle support. In order to send all required file for a specific problem or incident, we will use ADRCI or Enterprise Manager.

We can also use Enterprise manager to create an incident manually using Support Workbench as covered in the paper later where I am adding Alert.log file.

CREATING PACKAGE USING ADRCI

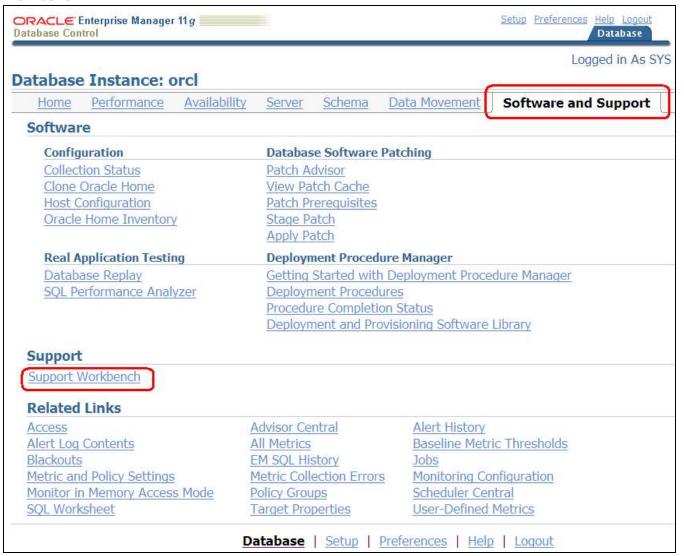
adrci> show incident ADR Home = /home/oracle/app/diag/rdbms/orcl/orcl: INCIDENT ID PROBLEM KEY CREATE TIME 14773 ORA 1578 2007-08-15 09:08:51.749759 -04:00 14772 ORA 1578 2007-08-15 09:08:41.329081 -04:00 2007 - 08 - 15 09:08:39.554096 -04:0014771 ORA 1578 2007-08-15 09:08:38.027391 -04:00 14770 ORA 1578 14769 2007-08-15 09:05:38.961166 -04:00 ORA 1578 5 rows fetched adrci host "ls -ltr /home/oracle/app/diag/rdbms/orcl/orcl" drwxr-x--- 2 oracle oinstall 4096 Aug 13 10:39 cdump drwxr-x--- 2 oracle oinstall 4096 Aug 13 10:39 metadata drwxr-x--- 2 oracle oinstall 4096 Aug 13 12:34 hm drwxr-x--- 2 oracle oinstall 4096 Aug 14 09:52 alert drwxr-x--- 2 oracle oinstall 4096 Aug 14 11:01 ir drwxr-x--- 2 oracle oinstall 4096 Aug 15 11:33 sweep drwxr-x--- 2 oracle oinstall 4096 Aug 15 11:33 stage drwxr-x--- 2 oracle oinstall 4096 Aug 15 11:33 lck drwxr-x--- 7 oracle oinstall 4096 Aug 15 11:33 incident drwxr-x--- 7 oracle oinstall 20480 Aug 15 11:35 trace drwxr-x--- 3 oracle oinstall 4096 Aug 15 12:54 incpkg Create the Logical Package for incident 14773 adrci> ips create package incident 14773 Created package 1 based on incident id 14773, correlation level typical This will create a new sub-directory in the ADR_HOME/incpkg directory adrci host "ls -ltr /home/oracle/app/diag/rdbms/orcl/orcl/incpkg" total 4

```
If you want to add another incident to bundle in the same package, use the following command or
go to next step
adrci> ips add incident 14769 package 1
Added incident 14769 to package 1
If you want to add more additional file to be bundled in the same package
adrci> ips add file <ADR_HOME>/trace/alert_orcl.log package 1
Added file <ADR HOME>/trace/alert orcl.log to package 1
Create physical package in the form of ZIP file in specified directory
adrci ips generate package 1 in /tmp
Generated package 1 in file /tmp/ORA1578 20070815125445 COM 1.zip, mode complete
Verify the Zip file mentioned in the previous output
adrci> host "ls -ltr /tmp/ORA1578_20070815125445_COM_1.zip"
-rw-r--r 1 oracle oinstall 2088815 Aug 15 13:13 /tmp/ORA1578_20070815125445_COM_1.zip
Check the Content of the Zip file and you will see that Oracle has added lots of files like
Trace file, Trace Mapping etc
adrci host "unzip -1 /tmp/ORA1578 20070815125445 COM 1.zip"
Archive: /tmp/ORA1578 20070815125445 COM 1.zip
 Length
            Date Time
                          Name
       0 08-13-07 10:39
                          diag/rdbms/orcl/orcl/
   52681 08-15-07 09:05
                          diag/rdbms/orcl/orcl/incident/incdir_14769/orcl_ora_13914_i14769.trm
  2053639 08-15-07 09:05
                          diag/rdbms/orcl/orcl/incident/incdir_14769/orcl_ora_13914_i14769.trc
  120355 08-15-07 10:10
                          diag/rdbms/orcl/orcl/trace/orcl_ora_13914.trc
    6583 08-15-07 10:10
                          diag/rdbms/orcl/orcl/trace/orcl_ora_13914.trm
  2053097 08-15-07 09:08
                          diag/rdbms/orcl/orcl/incident/incdir_14770/orcl_ora_13914_i14770.trc
   52510 08-15-07 09:08
                          diag/rdbms/orcl/orcl/incident/incdir_14770/orcl_ora_13914_i14770.trm
  2053051 08-15-07 09:08
                          diag/rdbms/orcl/orcl/incident/incdir_14771/orcl_ora_13914_i14771.trc
   52526 08-15-07 09:08
                          diag/rdbms/orcl/orcl/incident/incdir_14771/orcl_ora_13914_i14771.trm
   52511 08-15-07 09:08
                          diag/rdbms/orcl/orcl/incident/incdir_14772/orcl_ora_13914_i14772.trm
  2053005 08-15-07 09:08
                          diag/rdbms/orcl/orcl/incident/incdir_14772/orcl_ora_13914_i14772.trc
  2053004 08-15-07 09:08
                          diag/rdbms/orcl/orcl/incident/incdir 14773/orcl ora 13914 i14773.trc
                          diag/rdbms/orcl/orcl/incident/incdir 14773/orcl ora 13914 i14773.trm
   52536 08-15-07 09:08
                          diag/rdbms/orcl/orcl/trace/alert_orcl.log
   205233 08-15-07 11:35
   730289 08-15-07 11:35
                          diag/rdbms/orcl/orcl/alert/log.xml
     501 08-15-07 13:13 metadata.xml
 11822447
                          83 files
```



CREATING PACKAGE USING EM

Step 1: Logon to EM Database Console home page. Click on Software and Support and then **Support Workbench**

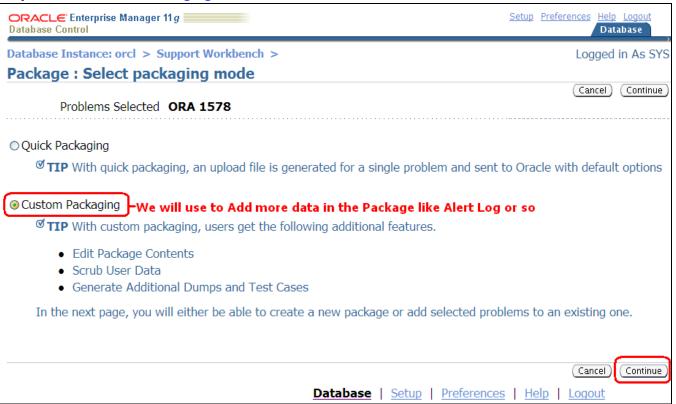




Step 2: Select the Problem **Check Box** As shown below for ORA-1578 and then click on **Package** button to package it

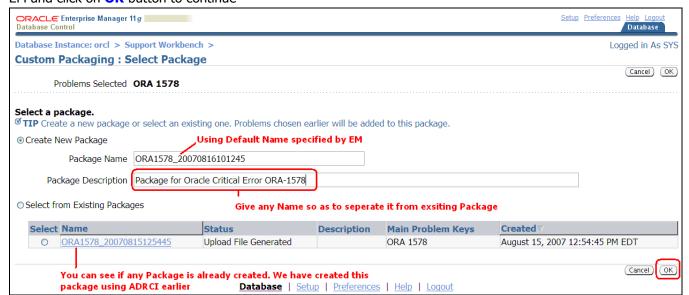


Step 3: Select Custom Packaging and click on Continue button



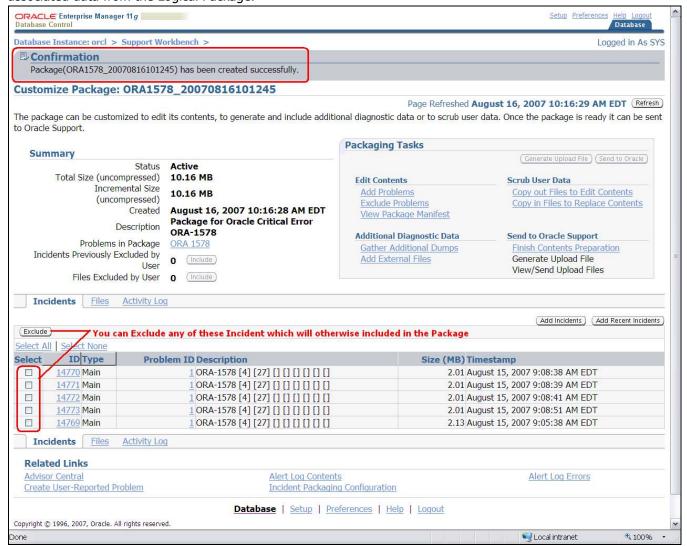


Step 4: Select **Create New Package**. Provide any **Description** to Default Package name provided by EM and click on **OK** button to continue



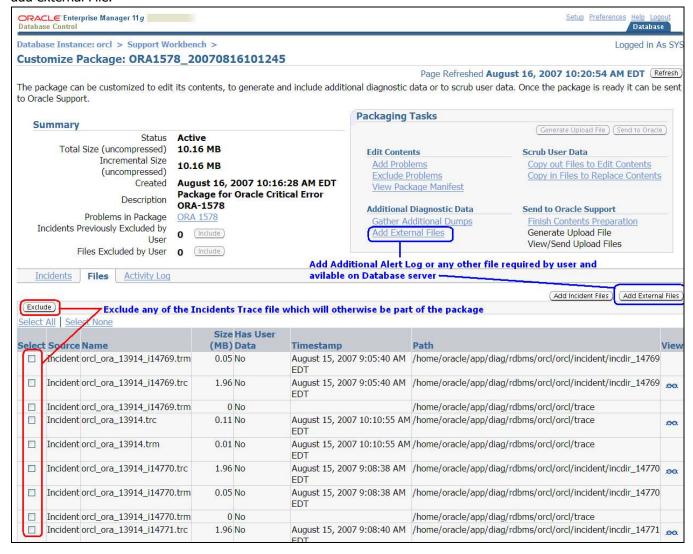


Step 5: Logical Package is created and now it has all diagnostic Data attached to it from ADR. We can use the following **EXCLUDE** button under **INCIDENT** tab to exclude any incident which will remove any associated data from the Logical Package.



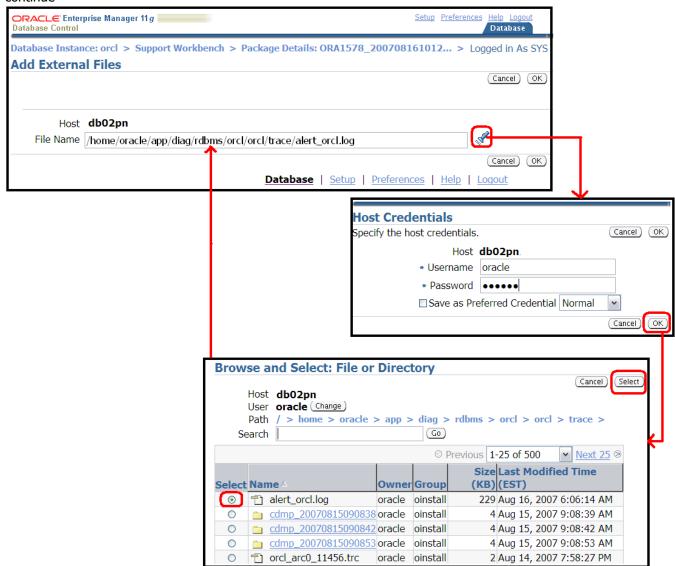


Step 6: We can use the following **EXCLUDE** button under **File** tab to exclude any trace file(s). We can also **add any External file** as per our requirement to the package. Step 7 will show the procedure to add external File.



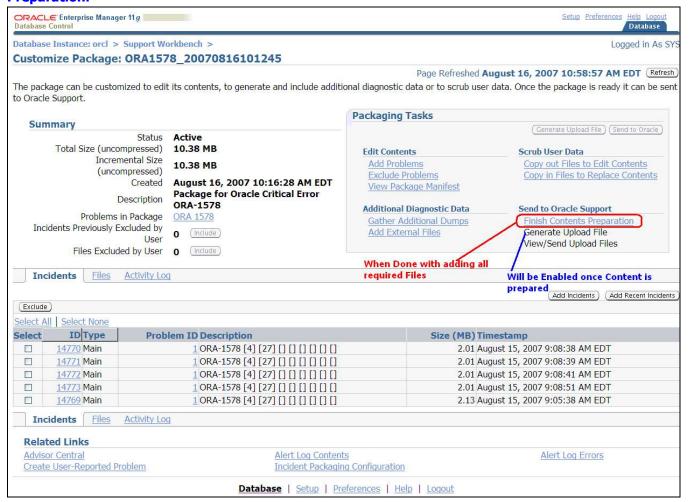


Step 7: Select the **Torch** to identify the file to be added to the package. Provide the Host credential of the Database server and Click **OK** to continue. Select the File like Alert log in our case and Click **OK** to continue



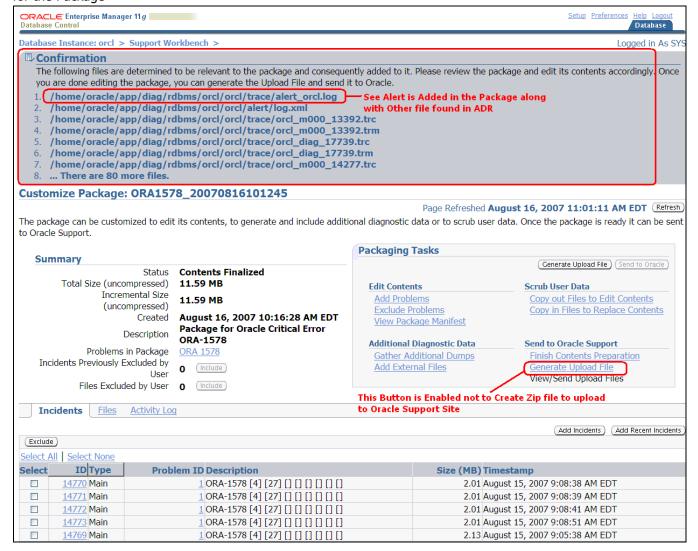


Step 8: We have Added the Alert log successfully to the Package and Click on **Finish Contents Preparation.**



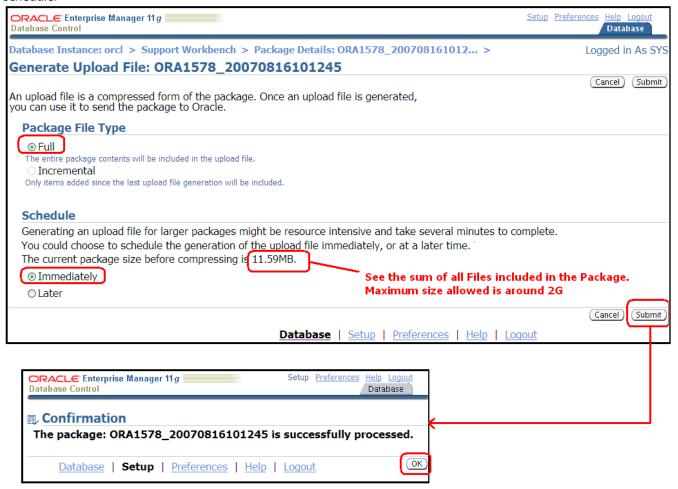


Step 9: You will see that Alert log as well as around 80 files are attached to this package. All these files are related to Problem selected earlier. Now we can click on **Generate Upload File** to create the ZIP file for the Package



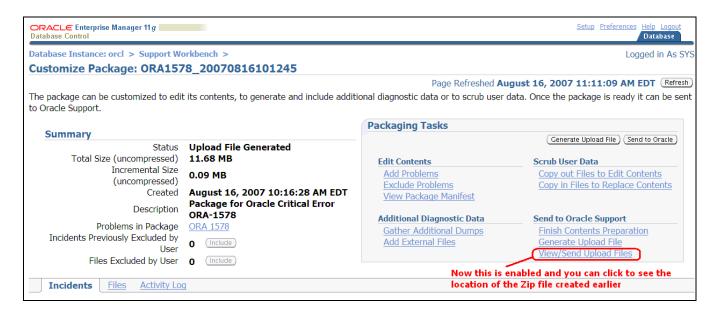


Step 10: Select the **Full** and schedule it run **immediately**. Click **Submit** to submit the job to the scheduler

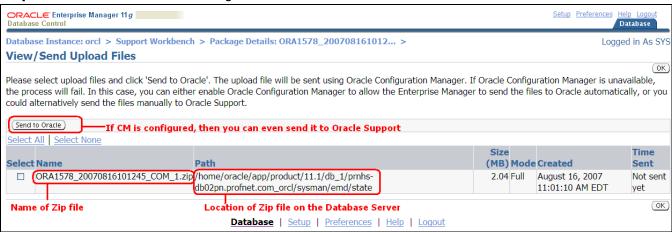




Step 11: Package is now generated in Zip file. Click on **View/Send Upload files** to see the name and location of the Zip file.



Step 12: We are done with the Package creation.





HEALTH MONITOR OR HM DIRECTORY

This directory contains the reports generated by the Health Monitor. Health Monitor examine various database components and below is list of some of them

- DB Structure Integrity Check
- Data Block Integrity Check
- Redo Integrity Check
- Logical Block Check
- Undo Segment Integrity Check
- All Control Files Check
- All Datafiles Check
- Single Datafile Check
- Log Group Check
- Log Group Member Check
- Archived Log Check
- Dictionary Integrity Check etc

You can get the complete list using the below query

Select name from v\$hm_check;

Health Monitor check can be invoked by any of the following method

- 1. Reactive → Whenever a Problem or Critical error is detected in the database
- 2. Manual →It can be done by any of the following ways
 - a. Using ADRCI
 - b. Using PLSQL API
 - c. Using Enterprise Manager



Using ADCRI

```
List all Checker Runs registered in the ADR.
adrci> show hm run
ADR Home = /home/oracle/app/diag/rdbms/test11g/test11g:
******************
HM RUN RECORD 1
*******************
...
*****************
HM RUN RECORD 30
******************
  RUN ID
                             621
                            HM_RUN_621
  RUN NAME
  CHECK_NAME
                            DB Structure Integrity Check
  NAME_ID
  MODE
                             2
  START TIME
                             2007-08-15 13:40:26.219314 -04:00
  RESUME TIME
                             <NULL>
  END TIME
                             2007-08-15 13:40:26.246310 -04:00
  MODIFIED TIME
                             2007-08-15 13:40:26.246310 -04:00
  TIMEOUT
  FLAGS
                             0
  STATUS
                             5
  SRC_INCIDENT_ID
                             0
  NUM INCIDENTS
                             0
  ERR_NUMBER
                             0
  REPORT_FILE
                             <NULL>
30 rows fetched
Suppose I want to create report for Run Name HM_RUN_621 which is for "DB Structure Integrity Check".
This will create the Report in ADR HOME/hm directory
adrci> create report hm run HM RUN 661
adrci> show report hm run HM RUN 661
<?xml version="1.0" encoding="US-ASCII"?>
<HM-REPORT REPORT_ID="HM_RUN_661">
   <TITLE>HM Report: HM_RUN_661</TITLE>
   <RUN INFO>
       <CHECK_NAME>DB Structure Integrity Check</CHECK_NAME>
       <RUN ID>661</RUN ID>
       <RUN_NAME>HM_RUN_661
       <RUN_MODE>REACTIVE</RUN_MODE>
       <RUN_STATUS>COMPLETED</RUN_STATUS>
       <RUN ERROR NUM>0</RUN ERROR NUM>
       <SOURCE INCIDENT ID>O</SOURCE INCIDENT ID>
       <NUM_INCIDENTS_CREATED>0</NUM_INCIDENTS_CREATED>
       <RUN START TIME>2007-08-15 13:43:22.215671 -04:00/RUN START TIME>
       <RUN_END_TIME>2007-08-15 13:43:22.240171 -04:00/RUN_END_TIME>
   </RUN INFO>
   <RUN PARAMETERS/>
   <RUN-FINDINGS/>
OR
adrci> host "ls -ltr /home/oracle/app/diag/rdbms/orcl/orcl/hm/HMREPORT_HM_RUN_661.hm"
       -- 1 oracle oinstall 711 Aug 15 13:50 /home/oracle/app/diag/rdbms/orcl/orcl/hm/HMREPORT_HM_RUN_661.hm
adrci > host "cat /home/oracle/app/diag/rdbms/orcl/orcl/hm/HMREPORT HM RUN 661.hm"
```

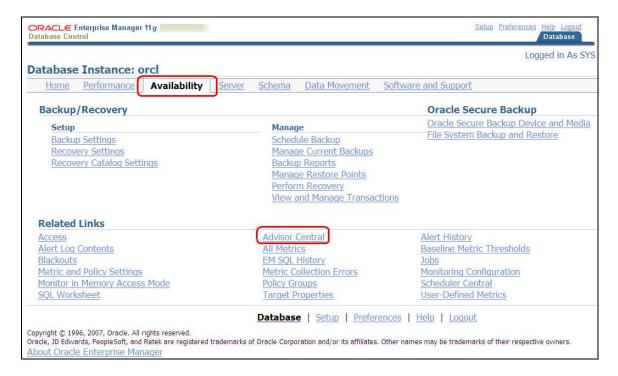
Using PLSQL API

```
Check the name of Available Checks
SQL> select name from v$hm_check order by 1;
All Control Files Check
All Datafiles Check
Archived Log Check
Block IO Revalidation Check
CF Member Check
DB Structure Integrity Check
Data Block Integrity Check
Dictionary Integrity Check
Failure Simulation Check
HM Test Check
IO Revalidation Check
Log Group Check
Log Group Member Check
Logical Block Check
Redo Integrity Check
Redo Revalidation Check
Single Datafile Check
Transaction Integrity Check
Txn Revalidation Check
Undo Segment Integrity Check
21 rows selected.
SQL> exec dbms_hm.run_check('DB Structure Integrity Check', 'indy_2');
PL/SQL procedure successfully completed.
SQL> select run_id, name, check_name from v$hm_run where name=' indy_2';
    RUN ID NAME
                                          CHECK NAME
      681 indy_2
                                      DB Structure Integrity Check
SQL> set long 1000000000
SQL> select dbms_hm.get_run_report('indy_2') from dual;
DBMS HM. GET RUN REPORT ('INDY 2')
Basic Run Information
 Run Name
                            : indy_2
 Run Id
                            : 761
                            : DB Structure Integrity Check
 Check Name
                           : MANUAL
 Mode
                           : COMPLETED
 Status
Start Time
End Time
Error Encountered
Source Incident Id
                           : 2007-08-15 14:51:47.986255 -04:00
                           : 2007-08-15 14:51:48.003219 -04:00
                           : 0
                             : 0
 Number of Incidents Created : 0
 More Details can be found from V$HM_RUN, V$HM_FINDING and V$HM_RECOMMENDATION,
```

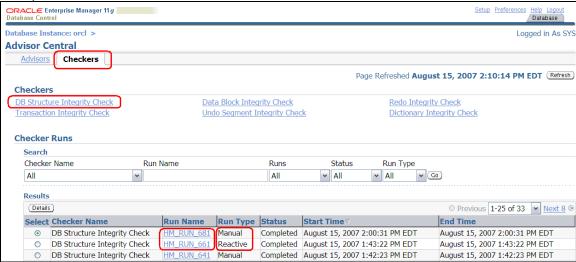


Using EM

Step 1 : Logon to Oracle EM Database Home page. Click on **Availability** and then click **Advisor Central**

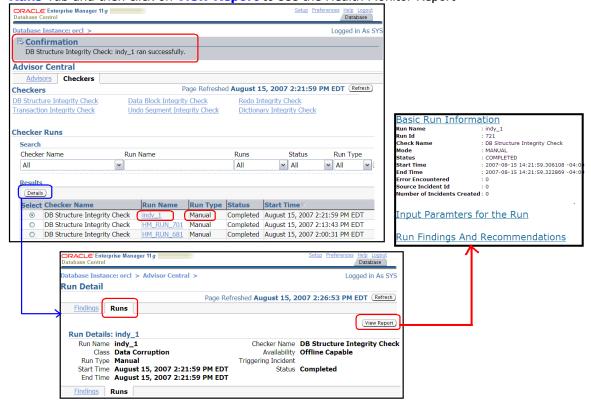


Step 2: Select Checkers Tab and then click the Checkers like DB Structure Integrity Check used in my example.





Step 3 : HM Report is ready now and select the Checker Name and then click on **Details**. Select the **Runs** Tab and then click on **View Report** to see the Health Monitor Report



METADATA

This directory under ADR_HOME contains the important file for ADR. You can compare this to a database dictionary which is queried by ADRCI.

