

Oracle® Database In-Memory Advisor

Release Notes

Version 2.0.0.1.0

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New Features and Changes

HTML Report Enhanced

The HTML report has been simplified and reformatted for ease of use. It includes a new mouse-hover feature: With any browser, you can hover your mouse over any of the blue, italicized table or column headings and a description of the corresponding table or column will appear.

Interactive Recommendation Script Replaced

The interactive script `imadvisor_analyze_and_report.sql` has been replaced with `imadvisor_recommendations.sql`. The new script has all the features of the original script:

- Supports Oracle Database 11.2.0.3 and later
- Supports live database workloads
- Supports use on non-CDBs, CDB roots and PDBs
- Supports a user-specified statistics capture window
- Automatically transfers the recommendation files to the client

The new interactive script `imadvisor_recommendations.sql` includes all of the above features and also has these new features:

- Supports augmented AWR workloads:

If you have imported AWR workload plus the corresponding AWR augment, the new script presents the list of available augmented AWR workloads and prompts for either a live workload or augmented AWR workload.

- Supports RAC instance specific recommendations:

If there is more than one RAC instance, the new script presents a list of RAC instances and prompts for the instance of your choice.

- Supports optimization for a user-specified In-Memory size:

The new script allows you to specify the In-Memory size up front before waiting for analysis if you already know the In-Memory size you wish. Alternatively, you can wait until after analysis and the new script presents a list of IM sizes with performance

estimates.

- Supports quick re-runs of an existing IM Advisor task for re-optimization for a different In-Memory size:

If you already have any existing IM Advisor tasks, the new script presents a list of available tasks along with a list of In-Memory sizes and performance estimates. It then prompts you for the new In-Memory size for which you wish to re-optimize. Re-optimization is always significantly faster than starting with a new task and typically only takes a few seconds.

- Supports defaults for prompts:

Almost all prompts show a default value. Just press ENTER, and the new script will use the default value.

- Support user-input settings prior to invocation:

Users can use the SQL*Plus DEFINE command to set any user-input prior to running the new script. Optional DEFINE settings:

- task_name
- run_against_augmented_awr ('Y' or 'N', default='N')
- dbid (for augmented AWR workloads; default = local DBID)
- instance_number
- inmemory_size

The original script `imadvisor_analyze_and_report.sql` remains but is deprecated. If you invoke the deprecated script, it will inform you of the new script and automatically switch to the new script.

Improved Advisor Performance / Hangs Resolved

The IM Advisor is now significantly faster. No hangs have been observed.

With lightweight workloads, the Advisor is approximately 30% faster. With mid-weight workloads, it is approximately 3X faster. The Advisor's performance improvement factor will generally be the greatest with the longest runs of its previous release.

In addition, the GENERATE_RECOMMENDATIONS interface completes in seconds. No run has been observed to even take one minute. This is an important improvement since this interface can be run multiple times for a given task.

Finally, a new parameter, SUPPRESS_LIVE_STATISTICS, has been added that can address Advisor performance issues with live workloads. Refer to the [Parameter Improvements](#) section for more information.

IM Advisor View Improvements

The names of IM Advisor public views have been changed to correspond with standard Oracle Database names. In addition, more views have been added:

- DBA_IMA_AWR_AUGMENTS (new)
- DBA_IMA_BENEFIT_COST (new)
- DBA_IMA_RECOMMENDATIONS (new)
- DBA_IMA_RECOMMENDATION_FILES (new)
- DBA_IMA_RECOMMENDATION_LINES (new)
- DBA_IMA_TASK_INFORMATION (new)
- USER_IMA_BENEFIT_COST (new)
- USER_IMA_RECOMMENDATIONS (new)
- USER_IMA_RECOMMENDATION_FILES (new)
- USER_IMA_RECOMMENDATION_LINES (new)
- USER_IMA_TASK_INFORMATION (previously IMADVISOR_TASK_INFORMATION)

Security Improvements

With previous releases, IM Advisor users required GRANT EXECUTE ON DBMS_INMEMORY_ADVISOR. With this release, the Advisor has been integrated with Advisor Framework security. IM Advisor users now only require GRANT ADVISOR. The Advisor's integration with the Advisor Framework significantly improves security against unauthorized users, SQL injections, etc. Moreover, the ADVISOR grant now makes the IM Advisor accessible to all users who have standard access to the Advisor Framework.

In addition, the Advisor now generates random passwords using the maximum length (30 characters) with a combination of all supported password characters, which is in compliance with the most strict password requirements. These random generated passwords are used with the IM Advisor schema and the AWR augment schemes.

Installation and Uninstall Improvements

Installation script instimadv.sql prompt improvements:

- It no longer prompts for the IM Advisor schema password. Instead, it generates a more secure, random password.
- It no longer prompts for the connection ID. It instead retains the original connection, which is both more convenient and secure.
- It no longer prompts for an IM Advisor directory object. Instead, it defaults to DATA_PUMP_DIR.
- It defaults to SYSTEM for the permanent tablespace. Provided SYSTEM exists, all you need to do is press ENTER.
- It defaults to TEMP for the temporary tablespace. Provided TEMP exists, all you need do is press ENTER.

New uninstall script catnoimadv.sql:

- Previous releases had no uninstall script. Instead, users were directed to DROP USER [C##]CASCADE. This left behind invalid public synonyms.
- catnoimadv.sql fully uninstalls the IM Advisor. It works with all IM Advisor versions.

Parameter Improvements

The following parameter name changes can make the purpose of these parameters more easily understood:

- READ_BENEFIT_FACTOR changed to INMEMORY_READ_PERF_FACTOR
- WRITE_DISADVANTAGE_FACTOR changed to INMEMORY_WRITE_PERF_FACTOR
- CPU_BENEFIT_FACTOR changed to INMEMORY_CPU_PERF_FACTOR

The original parameter names are deprecated but remain supported.

In addition, the following parameter has been added: SUPPRESS_LIVE_STATISTICS, default=F. When running with a live workload on the local database, ADD_STATISTICS (also used by the interactive script imadvisor_recommendations.sql) gathers both live data as well as data that has been flushed into the Automatic Workload Repository (AWR). The combination of both live and AWR data can produce more accurate results. However, the combination significantly increases the volume of data to be processed. If the Advisor takes too long to complete, try setting SUPPRESS_LIVE_STATISTICS to T.

Known Issues

1) Bug 21293453 – Install of IM Advisor May Hang

When installing the In-Memory Advisor in the CDB\$ROOT of a multitenant database monitored by an Enterprise Manager agent, the install may hang.

To resolve this issue, do one of the following:

- a) Download and install the patch for database bug 21293453.
- b) Stop the EM Agent before installing the Advisor. Restart the Agent after the install is complete.
- c) Install and run the Advisor from within a pluggable database (PDB).

2) BUG 21956804 – IM Advisor only looks for SQLSETs from augmented AWR

When using DBMS_INMEMORY_ADVISOR.ADD_SQLSET with an augmented AWR workload imported from a different database, the IM Advisor only looks for the SQLSET in the AWR augment data. Therefore, in order to use ADD_SQLSET with an augmented AWR workload, you must create the SQLSET on the database from which you export the augmented AWR workload prior running imadvisor_awr_augment_export.sql. Then respond to the imadvisor_awr_augment_export.sql prompt for a SQLSET with the name of the SQLSET you wish. With this action, the SQLSET will be available to the IM Advisor on the database where you import the augmented AWR workload.

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