ORACLE

Best Practices for Oracle Analytics Cloud with Enterprise Performance Management (EPM)

Pre-Requisites

TOPIC	EXPLANATION	OFFICIAL REFERENCES/BLOGS
Which Oracle EPM Business Processes Does Oracle Analytics Support?	Oracle Analytics supports: ▪ Financial Consolidation and Close ▪ FreeForm ▪ Planning and Planning Modules ▪ Profitability and Cost Management ▪ Tax Reporting Oracle Analytics does not support: ▪ Account Reconciliation ▪ Enterprise Data Management Cloud ▪ Narrative Reporting	▪ Support Note ▪ Official Documentation
OAC: How to directly connect to EPM through OAC from DV	▪ Create a connection using the direct EPM Connector ▪ Create a dataset to the EPM application using the initially created connection ▪ Workbooks can be developed through the dataset created	▪ Official Documentation
OAC: How to Model EPM in an RPD in the BI Client Tool (admintool.exe) or Model Administration Tool using a local JAVAHOST	Download the latest model administration tool from the following official download link and follow the steps under the official references/blogs	▪ Official GitHub Note ▪ Official CEAL Blog ▪ Official Documentation

Long Term Option/Recommendation

TOPIC	RECOMMENDATION	ADDITIONAL DETAILS
Option 01: Design specific EPM Reporting Cubes for better performance with direct connectivity between EPM and OAC	▪ We recommend customers to create smaller analytical cubes like ASO cubes with a smaller number of dimensions. Only include dimensions required for performing analytical operations ▪ This will ensure smooth interaction with the cube, better performance, and ease of usability for the end users	EPM business process applications like EPBCS and FCCS would be having many business processes and calculations, along with metadata and data refresh times. A smaller analytics cube with data pushed and refreshed from the business process application would ensure no-critical-impact on the regular usage of the business process applications. Smaller aggregated cubes would also ensure easy use of dimensionality for the end users to do quick slice and dice through the multi-dimensional hierarchies.
Option 02: Utilize Essbase to speed up analytical usage	▪ This suggestion holds true for: a. EPM applications with very large data volumes b. EPM applications with much higher concurrent user-count for analytical usage than for application usage c. EPM applications with analytical use cases requiring complex algorithms" ▪ We recommend customers to deploy Essbase on Oracle Cloud Infrastructure through the Oracle Cloud Marketplace ▪ Deploy Essbase on Oracle Cloud Infrastructure (OCI) and migrate the EPM applications through Essbase LCM, and design the OAC layer on Essbase ▪ Incremental refreshes can be designed using Load Rules for both Metadata and Data between EPM and Essbase on OCI	With much larger dimensionality, massive data volume and larger concurrent user base, direct connectivity with EPM could impose challenges to the overall performance of OAC dashboards. Such applications can be investigated for migration to Essbase analytics engine through the Oracle Cloud Infrastructure (OCI) Marketplace deployment. EPM applications can be seamlessly migrated to Essbase Cloud retaining the same dimensionality with improved performance using the flexible compute shapes available on OCI.
Option 03: For Advanced Analytics like Blending data and executing Machine Learning Data Algorithms on EPM and non EPM data	▪ Take data from EPM to Autonomous Data Warehouse (ADW), combine data from different sources into ADW, and use the many built in advanced analytics functionalities of OAC on top of ADW ▪ We recommend customers to export data from EPM to ADW with flat metrics for creating smaller analytics warehouses for advanced analytics	With EPM data coming to ADW, Organizations can execute advanced analytics data flows and machine learning data algorithms on this data, deriving and curating advanced insights on EPM data.

EPM and OAC Best Practices (Official CEAL Recommendation)

TOPIC	RECOMMENDATION	OFFICIAL REFERENCE
Reduce the number of queries	▪ Avoid using hand-written syntaxes habitually utilized in purely multidimensional use cases like "filter using" ▪ Always prioritize utilization of normal Oracle Analytics filtering methods ▪ Oracle Analytics will natively transform all filter criteria into the most performant query syntax in the background ▪ Forcing a specific query syntax by manually writing "filter … using …" statements will be extremely detrimental to performance	▪ Official CEAL Blog ▪ Performance Tuning with Excluded Columns
Do not enable "Include Null Values"	▪ Classic Analysis level setting to deselect null values	
Remove excluded columns from analyses	▪ Classic Analysis avoid excluded columns	
Reduce the volume of data retrieved	▪ Reduce column size from default size 100 in Physical Layer of RPD when possible ▪ Reduce the number of rows retrieved in the analysis by applying appropriate filters ▪ Reduce the number of columns displayed in the analysis when possible	
Reduce the impact of network latency	▪ Set DEFAULT_BULK_FETCH_ROW_COUNT setting to 5000, and the MAX_BULK_FETCH_BUFFER_SIZE to 10 000 000 in the database features properties in the physical layer of the repository.	
Enable immediate dashboard rendering	▪ In Console > System Settings > set Enable Immediate Dashboard Rendering to ON	
Tuning Connection Pool in OAC RPD	▪ Assess Your User Base and Usage Patterns: Understand how many users are accessing the system simultaneously. Not all users will be active at the same time, but you need to have an estimate of peak usage. Set the maximum connections to 10% to 20% of the simultaneous users multiplied by the maximum number of total physical queries spawned on any given dashboard.	

	▪ EPM (PBCS) Capacity: The capacity of the EPM to handle connections is crucial. If your EPM can handle 100 connections at a time, setting a higher number in OAC will not be beneficial. For example, in your EPM tenancy check for API rate limits. ▪ Load Testing in a Staging Environment: It is often recommended to test different maximum connection pool ▪ settings in a controlled environment to see how they affect performance. ▪ Monitoring and Adjusting: Start with a conservative number and monitor the system performance. If you notice that the connections are getting maxed out but the system is still performing well, you can increase the number. Conversely, if you observe performance issues, you might need to reduce the number.	
Performance Tuning Multi-Dimensional Database Queries	▪ Simplify the MDX generated ▪ Reduce the number of MDX queries generated ▪ Ensure that optimal filters and selections are applied in the MDX ▪ Performance tune with the DBA on the multi-dimensional database side and verify why the source database is still performing poorly ▪ Modify the analysis based on DBA feedback.	▪ Official CEAL Blog
Official Video on Performance Tuning Session for Essbase Cubes and EPM Cubes	▪ Improving Oracle Analytics performance with multi-dimensional data sources (Cubes): methodology, external aggregation or SUM, case vs filter	▪ Oracle VideoHub Link
Best Practices for IndexCol	▪ Improving Oracle Analytics performance with multi-dimensional data sources (Cubes): methodology, external aggregation or SUM, case vs filter	▪ Official CEAL Blog
Best Practices for Dimensional Hierarchies, Level Keys and Content Levels through RPD	▪ Learn more about native dimensionality concepts of OAC.	▪ Official CEAL Blog
Dashboard Rendering Mode Options	▪ Select the best option to render dashboards in Oracle Analytics Cloud	▪ Official Documentation

Performance and Compatibility Options for OAC	▪ You use these options to configure performance and compatibility settings between Oracle BI Enterprise Edition and Oracle Analytics. For example, you can set the maximum temporary file size.	▪ Official Documentation
Blending Essbase and EPM	▪ Oracle Essbase and EPM Cloud datasets cannot be used in the Add Data step as inputs to Data Flows ▪ The recommendation is to copy EPM data into a separate Essbase cube dedicated for analytics usage instead of doing a live connection to EPM	▪ Official Product Support Note

Common Observations/Questions

TOPIC	EXPLANATION	ADDITIONAL DETAILS
OAC: Adding Multiple Members from EPBCS Connection Causing "No Data" Message	▪ The reason the customer is not seeing any data is that PBCS does not usually represent data values at the root member of all the dimensions. ▪ The data values lie at lower levels along all the dimensions. So, the user must add filters on enough of the dimensions to reach a portion of the cube that contain data. ▪ This is the same idea as setting the "point of view" in EPM terms. This point of view must be established before data can be seen. ▪ Customer need to check the data cells from EPBCS workspace to see which data cells have data, then generate the report that has data. (this step requires customer EPBCS Admin)	▪ Official Product Support Note
Value and ValueSum	▪ The value column is imported from PBCS, the ValueSum column is derived from the value column ▪ ValueSum is mainly used to do aggregation within Oracle Analytics (or OBI) ▪ If you have a report that is filtered by a dimension, but this dimension is not included in the selected columns then you will have to use ValueSum	▪ Official Community Note
An Analysis With A Hierarchy Fails With: The Property Account.Sort Order Is Missing	▪ In the Physical Layer, double-click on the FCCS database ▪ Go to the Features tab	▪ Official Product Support Note

	▪ Click the Find button and enter: ANCESTOR_DIMENSION_PROPERTY_SUPPORTED ▪ Check ON the checkbox in the VALUE column ... ▪ Click OK ▪ Re-deploy the RPD	
"Unknown Error: 1270001" When Trying To Get Data From PBCS	▪ Open the RPD in the Administration Tool ▪ In the Physical layer open the Database object type (not the Connection Pool) connection to PBCS ▪ Go to the Features tab ▪ Enable the ANCESTOR_DIMENSION_PROPERTY_SUPPORTED feature ▪ Save and deploy the RPD	▪ Official Product Support Note
Searching For A Member In DV Errors With ""Target data source does not support the Like operation".	▪ The following is the workaround for this error before this is fixed: ▪ Set the variable in the RPD with " CONSTANT_OPTIMIZATION_LEVEL=1;" . This should resolve the error	▪ Official Product Support Note