ORACLE

ADDM Spotlight

Turns expert tactical advice into strategic performance optimization insights

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Agenda

Why ADDM Spotlight?

ADDM review

- Findings, recommendations, DB time
- Tactical vs strategic

ADDM Spotlight

- Value propositions
- Use cases
- Aggregations

Features

- Summary timeline
- Findings, Recommendations and Database Parameters tab

Demo

Why ADDM Spotlight?

- ADDM is under-utilized by customers

- Recommendations may be risky, costly, or require effort to implement

- Individual ADDM runs are mostly used tactically to diagnose transient performance incidents

- Aggregating many ADDM runs can provide insights into optimizing total workload performance

- Eliminating chronic issues can be as useful as solving complex ones

ADDM: Automatic Database Diagnostic Monitor

ADDM implements the DB Time method for optimizing Oracle database performance

- "Shrink the DB Time, improve performance"
- Rules-based expert system incorporating decades of top performance experts' knowledge

Findings are statements about DB Time

- **Impact** is the amount of DB Time associated with a finding

Recommendations are suggestions for reducing the DB Time of a finding

- There can be multiple recommendations per finding
- **Benefit** is potential reduction in DB Time from implementing the recommendation

ADDM analyzes AWR snapshots upon completion

- Tactical in nature since based on 1-hour performance snapshot

ADDM Spotlight value propositions and use cases

Value propositions

Use cases

Improve service levels: Optimize performance using most advanced expertise and proven DB Time methods.

"We sometimes see scheduler waits, should we add CPU?"

"The expensive consulting DBA recommended raising session_cached_cursors, will it help?

Increase staff productivity: Identify chronic issues and evaluate potential solutions and benefits.

"What are the performance bottlenecks with nightly batch jobs?"

"Which SQL were most involved in that big multi-day performance blowup?"

ADDM Spotlight

Summary timeline

- Finding/recommendation counts by category over the time period in a stacked bar chart
  - Colors align with event wait class color branding
- Include annotations for instance re-starts and configuration parameter changes
- Detect periodicity in findings by category, visualizes the frequency aggregation
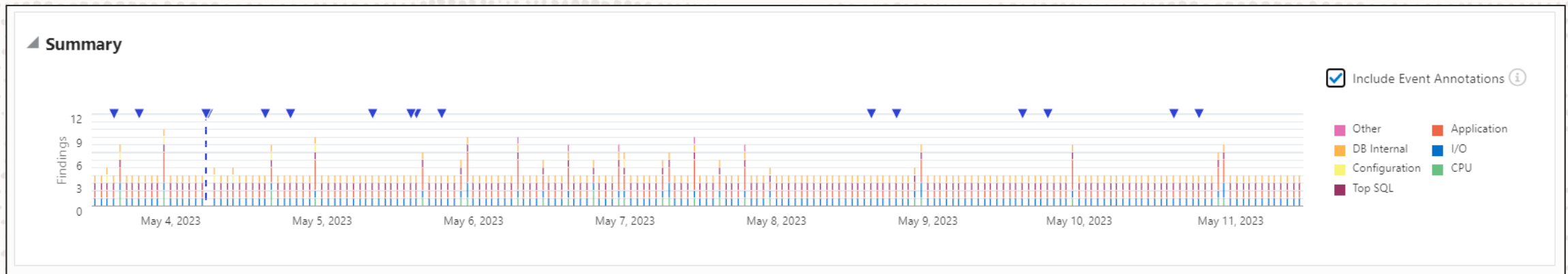
Finding Categories

Organizing findings into groups for aggregation

Categories align closely with wait classes

- DB Time based, similar purpose
- Filters

Color branding aligns with major wait classes

- CPU is green
- I/O is blue
- Application is orange

Category	Finding Name
Top SQL	Top SQL Statements
Application	PL/SQL Execution
I/O	"User I/O" wait Class
I/O	Top Segments by "User I/O" and "Cluster"
I/O	Unusual "User I/O" Wait Event
Application	Hard Parse Due to Parse Errors

Finding and Recommendation aggregations
Make informed decisions about systemic performance optimization

Frequency
- Number of ADDM runs with the finding out of total ADDM runs

Overall impact/benefit
- Ratio of total finding DB Time to total DB Time expressed as a percentage

Maximum impact/benefit
- Maximum ratio of finding DB Time / Total DB Time within AWR snapshot

Frequency	Avg Active Sessions ⓘ	Max Impact ⓘ	Overall Impact ⓘ
19 of 23	0.08	78.05%	52.87%
18 of 23	0.04	44.68%	25.85%
13 of 23	0.02	21.49%	11.31%
13 of 23	0.01	14.51%	6.42%

Findings and Recommendations

- Findings are statements about where DB Time is accumulated in the database
- Recommendations are actions to take that may reduce DB Time of a finding
- Findings may have multiple associated recommendations
- Recommendations include an explanatory rationale with supporting data

I/O	Top Segments by "User I/O" and "Cluster"

Recommendations for Finding: Top Segments by "User I/O" and "Cluster"

Description: Individual database segments responsible for significant "User I/O" and "Cluster" waits were found.

Type	Recommendation ▲	Rationale
Segment Tuning	Investigate application logic involving I/O on INDEX "SOE.ITEM_ORDER_IX" with object ID 106094.	The I/O usage statistics for the object are: 0 full object scans, 101300 physical reads, 69724 physical writes and 0 direct reads.
Segment Tuning	Run "Segment Advisor" on TABLE "SOE.ORDERS" with object ID 106066. Investigate application logic involving I/O on TABLE "SOE.ORDERS" with object ID 106066. Look at the "Top SQL Statements" finding for SQL statements consuming significant I/O on this segment. For example, the SELECT statement with more...	The I/O usage statistics for the object are: 9100 full object scans, 457551983 physical reads, 47255 physical writes and 457486026 direct reads.

Recommendation for CPU finding

- CPU findings always important
  - Everything competes for CPU
  - Multiple recommendations
- Should we add CPU?
- Decision: start with tuning SQL CPU consumption

Recommendations for Finding: CPU Usage

Description: Host CPU was a bottleneck and the instance was consuming 76% of the host CPU. All wait times will be inflated by wait for CPU.

Type	Recommendation	Rationale	Frequency	Avg Active Sessions ⓘ	Max Benefit ⓘ	Overall Benefit ⓘ
Application Analysis	Look at the "Top SQL Statements" finding for SQL statements consuming significant time on CPU. For example, the SELECT statement with SQL_ID "34mt4skacwwwd" is responsible for 57% of CPU usage during the analysis period.		3 of 191	0.02	67.51%	1.75%
Host Configuration	Consider adding more CPUs to the host or adding instances serving the database on other hosts. Session CPU consumption was throttled by the Oracle Resource Manager. Consider revising the resource plan that was active during the analysis period.		3 of 191	0.02	52.59%	1.58%
Application Analysis	Parsing SQL statements were consuming significant CPU. Please refer to other findings in this task about parsing for further details.		1 of 191	0.00	4.32%	0.04%

Findings, Recommendations and Database Parameters tabs

- Findings ordered by Overall impact, recommendations by Overall benefit
- Recommendations grouped by implementation domain:
  - Database Parameters, SQL, Schema Objects
  - Top SQL finding has recommendations by SQL_ID (can be many)
- Database Parameter provides flexible opt-in filtering:
  - High impact & non-default

Demo

Conclusion

- ADDM Spotlight sheds the light on the findings and recommendations to improve database performance

- Proactively helps DBA to turn tactical findings into strategic findings

- Identifies chronic and persistent issues

- Gives you confidence in prioritizing and implementing the changes

Thank you!

Questions?

Q&A
Learn More

1. oracle.com/enterprisemanager

2. Video: ADDM Spotlight EM

3. Blog:
   https://blogs.oracle.com/observability/post/addm-spotlight-strategic-advice-optimize-oracle-dbms

4. Documentation: Oracle ADDM Spotlight documentation

5. [Try it now](Try it now)

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