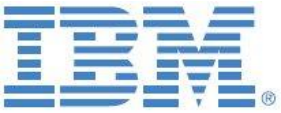

IBM Planning Analytics
Performance Maintenance & Tuning (Team):

Mandate, Benefit, Responsibilities & Enablement

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Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

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1 Mandate & Benefits

For larger and more complex Planning Analytics 'Enterprise' environments IBM Recommends the establishment of a dedicated (yet small) Performance Maintenance & Tuning team. Depending on the overall Planning Analytics environment, this may be a part-time role.

1.1 Mandate

The team's mandate will be to conduct ongoing performance monitoring, tuning, configuration & troubleshooting/analysis across all PROD environments (across all TM1 domains) as well as to Monitor, Analyze and Determine the root causes of possible thread-contention, performance issues and other locking behaviors.

1.2 Benefits

- Significantly higher level of services (to the System Owners) due to higher availability & performance
- Efficiency/productivity gains (dedicated experts, rather than general IT support)
- Operational Scalability (regular developers can be freed of evaluating and making configuration decisions which often can only be properly determined in a production-like environment. Developers can hence focus on design (yet following TM1 guidelines and standards that are to be established). The Performance tuning team – while having to be knowledgeable in TM1 design practices – can focus their attention on performance tuning, optimization and root cause analysis.

2 Responsibilities

2.1 Monitoring, Analysis & Remediation of thread-contention

Why:
- Maintain high quality User Experience
- Ensure Scalability
- Avoid redundant/unnecessary HW utilization caused by contention
- Avoid 'Locks'

Technical Topics/Areas:
- Building & using Subsets & Views in a multi-threaded environment
- TM1 Lock States
- Monitoring & Analyzing TM1 Log outputs

2.2 Configuration-Optimization

2.2.1 TM1 Database & Web Application Server Instance configuration parameters

Why:
- Ensure proven practices & standards are met and only approved configuration parameters are used => consistency in TM1 instance behavior and basic configuration, aligned with tested and proven practices

Technical Topics/Areas:
- TM1s.cfg, tm1web_config.xml

2.2.1.1 Multi-Threaded Queries

Why:
- Optimize Query performance,
- Optimize HW utilization

Technical Topics/Areas:
- TM1 Multi-Threaded Query (MTQ) Configuration,
- HW configuration (Hyper-threading)

2.2.2 Configuration-Optimization: TM1 cache

Why:
- Optimize Query performance,
- Optimize HW utilization

Technical Topics/Areas:
- VMM (Cache Pool), VMT (Query Time Threshold),
- VMM & VMT with TM1 Multi-Threaded Queries (MTQ),
- Monitoring & Analyzing cache utilization

2.2.3 Configuration-Optimization: Internal Cube Dimension Sort Order

Why:
- Optimize Query performance,
- Optimize HW utilization (more efficient RAM utilization)

Technical Topics/Areas:
- Internal Dimension Sort Order Optimization

2.3 Recommended reading & training

- IBM Whitepapers/Materials: see column 'Configuration & Performance Tuning' in the IBM Planning Analytics Advanced Enablement Session & Materials Matrix.