ORACLE
FUSION MIDDLEWARE
WEBCENTER

Oracle WebCenter Portal – Performance Tuning

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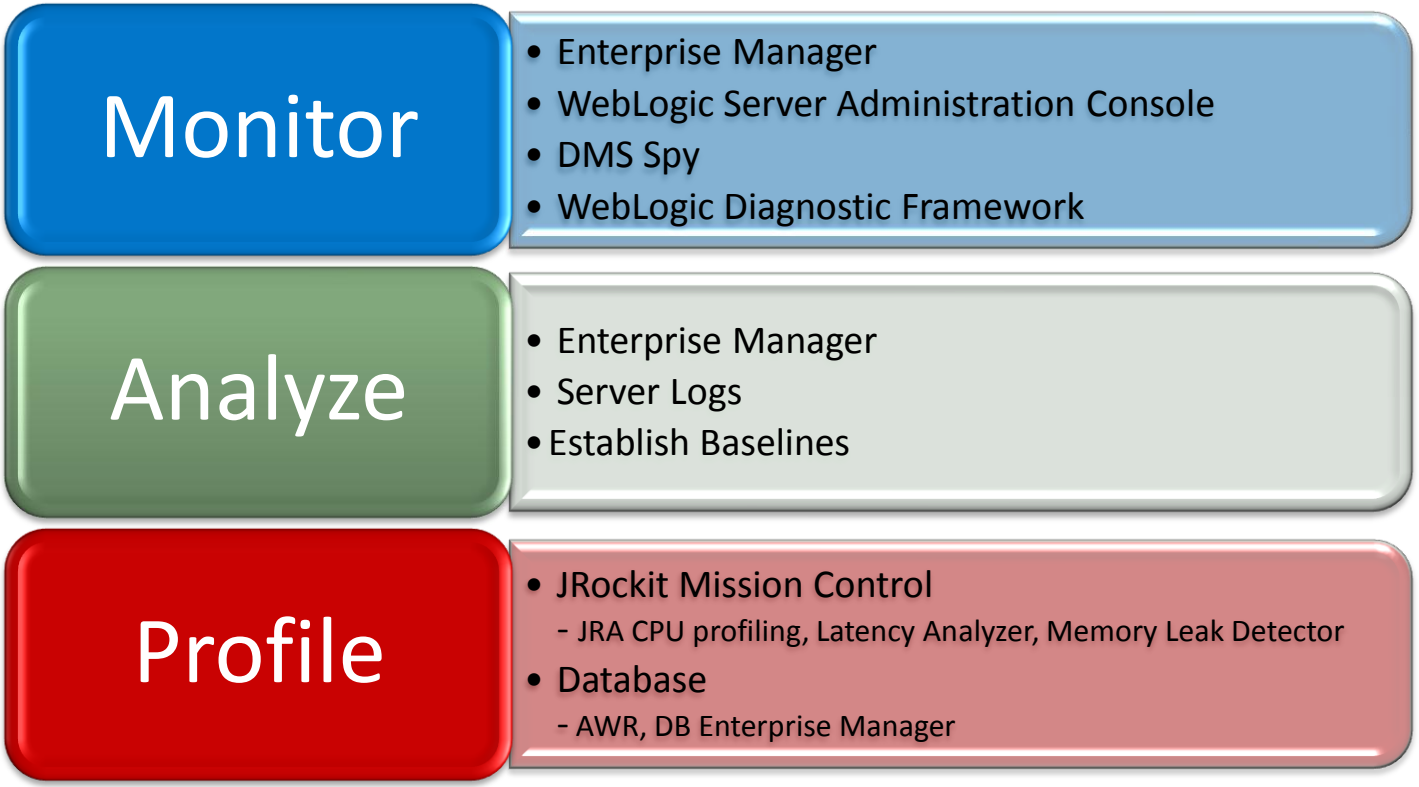
Performance Tuning Tools



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Performance Tuning

Example Enterprise Manager Features

- Monitor system using Oracle Enterprise Manager Grid control with the Oracle WebCenter Management Pack
  - Implement alerts and thresholds
  - View status and availability
  - Dashboard monitoring
- Configure and Monitor Logs
  - Search across logs using the Execution context ID (ECID)
  - Configure optimal log level for components
- Analyze current and historical WebCenter Portal performance metrics
- Monitor JVM running managed servers

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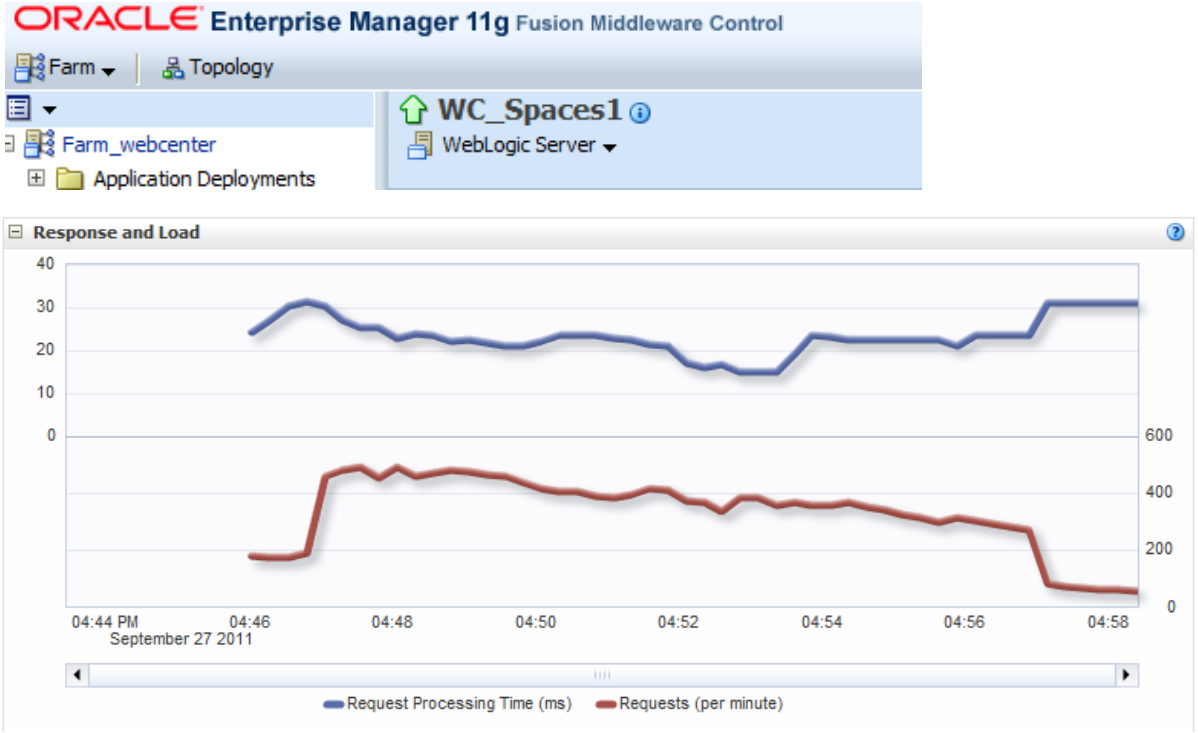
Performance Tuning

System Performance – Response and Load



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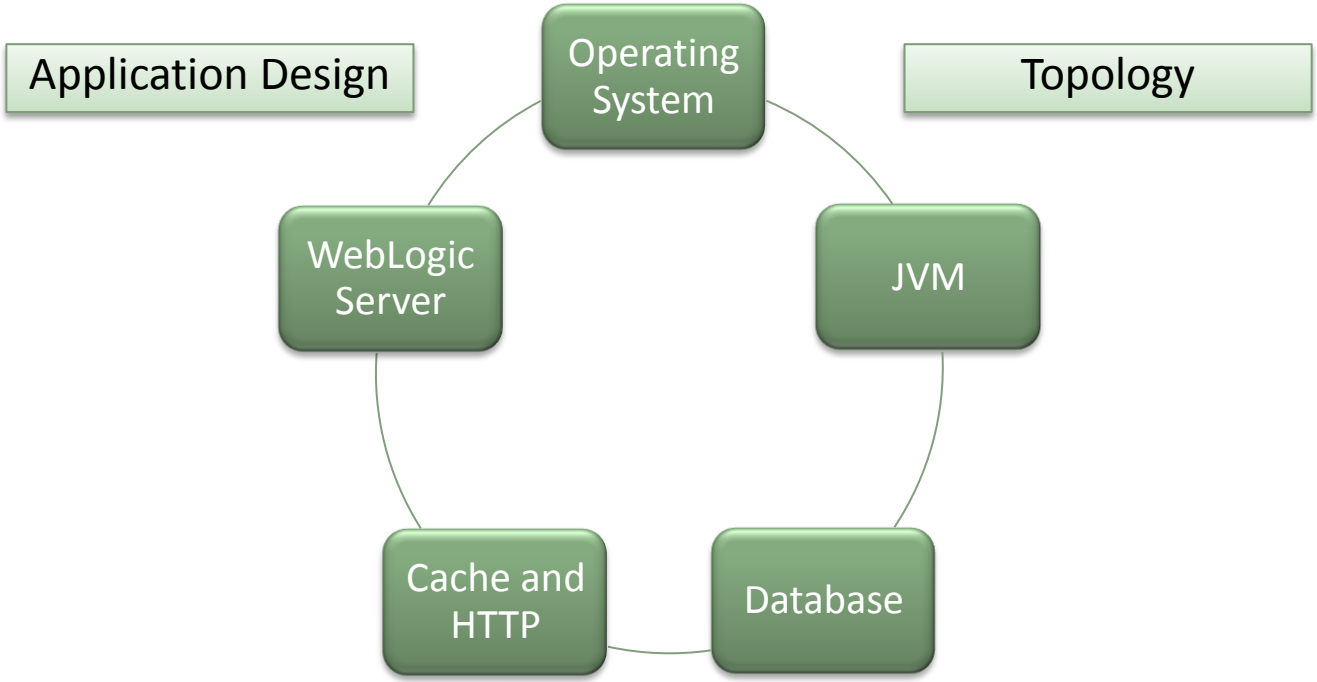
Performance Tuning

Factors



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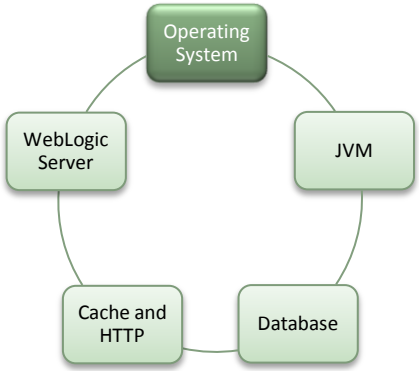
Performance Tuning

Operating System



- Validate hardware resources are sufficient
  - System CPU capacity (/proc/cpuinfo)
  - System physical memory capacity (/proc/meminfo)
- Monitor top memory and CPU consumers (top)
  - System memory is low if free is < 100mb and cached is < 1GB
  - System may be slow because it is blocked by physical I/O if %wa is *always* more than 10%
- Adjust TCP wait_time value and TCP queue size
- Monitor virtual machine stats (vmstat)
  - If swap in and out (si, so) are non-zero for more than 1/3 of time, the system could get into thrashing mode and any program running would be unusually slow

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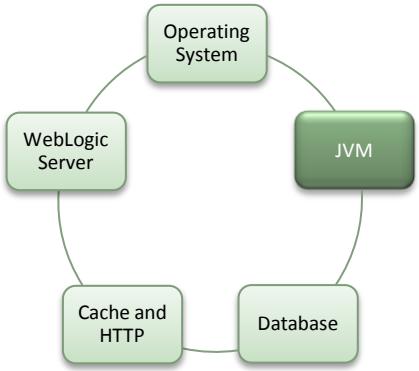
Performance Tuning

JVM



- 64 bit vs 32 bit
- Garbage collection
  - Nursery Size Blog
  - Detect and disable explicit executions
- Use large pages Blog
- Heap Size (-Xmx)
- Monitor memory trends and log low memory conditions
- Monitor thread activity: stuck, hung, deadlock
- Use multiple thread dumps to detect contentious areas

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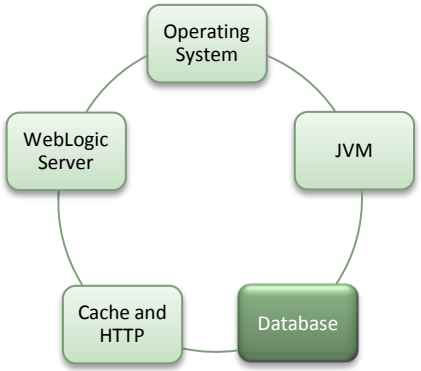
Performance Tuning

Database



- DB tuning parameters
- Redo Logs
- Manage statistics (dbms_stats)
- Tuning other areas may impact database
  - Number of concurrent database sessions
  - High parse rate

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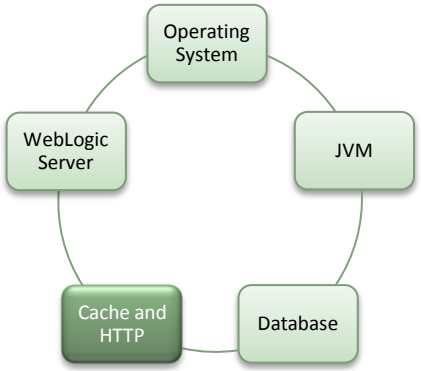
Performance Tuning

Cache and HTTP



- Oracle HTTP Server
  - Analyze directives
  - Persistent connections Guide
- Implement cache servers (Oracle Web Cache)
  - Reduce workload on other servers
  - Locate close to end users
- Implement compression and browser cache Support Note
- WebCenter uses both the Java Object Cache (JOC) and Coherence to cache various objects

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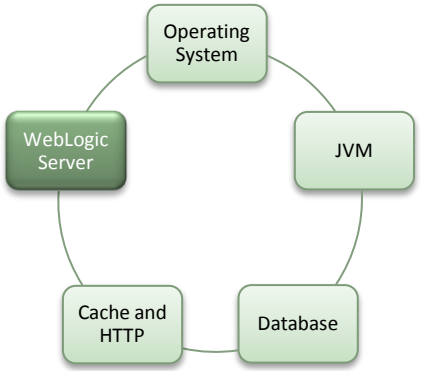
Performance Tuning

WebLogic Server



- Run the WebCenter Domain in production mode
- JDBC connection pools
  - Manage initial and maximum capacity
  - Use Test Connections on Reserve with care
  - Use Prepared Statement Cache (start with low value, e.g. 5; impacts database parses and server memory)
- Increase socket reader threads if I/O bound, but CPU available
- Configure portlet timeout, pool, and cache size in the adf-config.xml file
- Configure JSP timeout, and set view state compression to true in web.xml

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Oracle WebCenter

Portals, Composite Applications, and Mashups

- Environment Basics: install, schemas, domain servers, backup
- Enterprise Deployment: development, build, test, stage, production
- Performance Tuning: O/S, JVM, database, cache and HTTP, WebLogic Server

For Environment Basics, see *Oracle WebCenter Portal – Installation & Configuration*

For Enterprise Deployment, see *Oracle WebCenter Portal – Enterprise Deployment Lifecycle*

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