Observe, Analyze and Tune for Performance

COURSE TYPE, DURATION & COURSE CODE

Onsite three (3) Days (*)

PREREQUISITES

Experience as a CA Datacom database administrator (DBA), attended the CA Datacom Administration course, and/or familiarity with the DBA job description is recommended

COURSE ACTIVITIES

Demonstrations

Hands-on exercises

WHO SHOULD ATTEND

CA Datacom Database Administrators and/or Sysprogs

(*) optional: 2-days training-on-the-job, working on real performance issues!

Course Overview

This course is all about performance in a CA Datacom environment.
Factors that affects performance positively or negatively, how to monitor and how to heal performance issues. Learn from failures to improve database design and application programming.

What You Will Learn

How to monitor CA Datacom' s behavior and performance, how to observe the system, what ratios to watch for. How to observe, analyze and tune for performance.

Which statistics are needed, how to acquire and analyze them and based on that, how to tune.

Relate statistics to the processing load in a CA Datacom production environment.

Find out whether bad performance is caused by too many I/Os, high CPU or much waiting time. Learn how to minimize resource consumption, thus reducing the need for hardware upgrades.

For Managers

Your CA Datacom DBAs need this training to be able to effectively and efficiently manage performance of your database environment and to fully exploit available features that allow for optimal performance and resource usage.

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Course Agenda

Module 1 – Introduction	Module 2 – Data access and data storage
General thoughts on Performance Client and Server communication Bottlenecks: where can it go wrong? Scope, Datacom architecture MUF communications, local/remote access MUF communication, dispatching priority CICS Services, important settings	Command sets and access types The role of the URT The importance of I/O Data storage From DXX to Data Area Sequential processing The role of the Native Key Impact of deletions Impact of inserts After deletions and inserts What is REORG Data in core to reduce I/O
Module 3 – Performance: Observe	**Module 4 – Performance: Analyze**
What are the figures telling me? Baseline, what is it? Find baseline, what to look for? Data Manager Requests Buffer usage (data, IXX,DXX) efficiency Compound Boolean Selection Logging, indications of proper settings Accounting, indications of proper settings Area Requests, what do they tell us Table accesses, application data processing TCB-SRB usage, efficiency of zIIP usage Symmetrical Multi-Processing effectiveness Sequential processing efficiency I/O waits, variable logging efficiency Return codes, impact on performance SQL codes, impact on performance	Are statistics representative? Use of statistics, which one and from where? Causes of bad performance Is there an I/O problem? DMR to I/Os, what is a bad ratio? Do we have a CPU problem? Caused by Logical I/Os? Caused by number of requests? Caused by compression? Waiting problem: neither I/O nor CPU cause?

BlueLight on Mainframe Database Management focuses on CA Datacom and CA IDMS: education, best practices training solutions and a variety of services.

Our training is based on the idea that the best you can learn is to help yourself!

BlueLight
Mainframe Database Management

Course Agenda continued

Module 5 – Performance: tune

Reducing I/Os
- Adequate buffer allocation
- Multi-block Reads
- Memory Resident Data Facility
- Pipeline
- Index-only processing
- Data clustering
- Compression
- Reducing seek time
- Proper Accounting Facility settings
- Define matching Keys
- Multi-Dataset Index
- Table Partitioning

Reducing CPU usage
- Reduce I/Os
- Blocked GETIT
- Define matching Keys
- Reduce logical requests
- Avoid compression
- Reduce number of data requests
- Use SQL join

Module 5 – Performance: tune (cont.)

Reducing wait times
- Avoid data contention
- Use Symmetric Multi-Processing
- Use (I/O) subtasks
- Asynchronous request processing
- Multiple concurrent requests
- MUF communication
- Effective log spilling

Module 6 – exercises

- System and Table requests
- Area I/Os and Table-requests
- Table-access and Table requests
- CPU and elapse time

- References and Tools