Day-1

SECTION 1 : JAVA PERFORMANCE ENGINEERING - BASIC LEVEL

Different types of JVM

Detailed explanation about JVM Architecture Internals

Detailed explanation about JVM Heap Structure

Understanding the different types of Garbage collections techniques

Understanding the JVM thread pooling concepts

Detailed about JDBC connection pooling

JAVA DEBUGGING CONCEPTS

Day-2

SECTION 2: JVM PERFORMANCE TUNING - ADVANCED LEVEL

JVM Performance Monitoring

Detailed understanding about JVM performance monitoring

How to Monitor Java Application using Open source tools(JConsole,JvisualVM)

How to monitor the Java application using commercial tools (Yourkit)

JVM Thread Thump Analysis

Basics of Thread dumps

How to collect the Java Thread dumps

Techniques to analyze Thread dumps

How to identify Performance patterns using Thread dumps

Java Thread dump Tools

Hands- On Training

JVM Garbage collection Analysis

Collecting the GC logs

Real-time GC monitoring

How to analyze the GC logs

How to detect memory leak related issues using GC logs

JVM OutofMemory Error Analysis

Understanding the Application performance issues due to memory constraints

Basics of Memory Leak

Different between Memory leak and OutofMemory issues

Basics of OutofMemory issues

Different patterns of JVM OutofMemory issues

How to identify the Memory Leak and OutofMemory issues

How to Collect heap dumps from JVM

How to analyze the Heap dumps using Eclipse MAT&amp; JvisualVM

Day-3

SECTION 3 : PERFORMANCE PROFILING TOOLS

JProfiler

Yourkit

JvisualVM

Dynatrace APM &amp; Ruxit

SECTION 4 : PERFORMANCE BEST PRACTICES

How to apply various techniques to fine-tune the Java applications

Techniques to Optimize the JVM performance

Day-4

SECTION 5 :DATABASE PERFORMANCE MOINTORING

Oracle Database monitoring

Understanding the AWR,ASH,ADDM Reports and locating Database performance issues

SECTION 6 :CLIENT SIDE PERFORMANCE TUNING

Importance of Front end performance

Common Performance problems at front end

How Browser Rendering works

Critical Performance metrics at front end

Client side performance tools

-Chrome Dev tools

-Dynatrace Ajax

-GTMetrix

How to optimize the Critical Rendering path

- Put Stylesheet on Top

- Put Javascripts down.

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- Inline the JS and CSS (if its small in size)

- Remove Duplicate Scripts

- Make CSS &amp; JS external

- Prioritize the visible content( consider DEFER )

- Served Scaled images

Optimizing the Content Efficiency

-Minify the CSS &amp; JS

- Gzip Compression

- Image compression

- Browser level caching

- Avoid Redirects

* Use a content Delivery

Lab setup:

* Oracle JDK 1.7 runtime
* Node.js runtime
* Eclipse & Visual studio code IDE latest
* Jconsole, JvisualVM tools
* Jmeter tool