MAXIMIZING WEBSPHERE V7 PERFORMANCE ON Z/OS

Description

This course is designed to analyze the WebSphere V7.0 for z/OS performance. The goal is to tune WebSphere V7.0 for z/OS and its environment on z/OS for maximum performance. Benchmark tools are used to simulate a J2EE transaction workload against WebSphere for z/OS, and then performance tools are used to monitor performance data on these transactions.

Each student group has their own z/OS system where they start with an untuned application server environment. In the lab exercises, they will apply tuning changes, and then perform measurement runs. The result will be taken and transferred to a table for performance comparisons. The class discusses tuning of important subsystems (for example UNIX System Services, IBM HTTP Server for z/OS, the Java JVM), as well as the WebSphere infrastructure, and some J2EE application performance tuning.

Objectives

- Simulate workload in a WebSphere for z/OS environment, and install and use tools for performance measurement
- Establish a methodology for making performance measurement runs
- Investigate the current hardware resources and understand how to minimize the WebSphere for z/OS storage demand
- Explain the importance of WLM for WebSphere for z/OS performance
- Describe the resource areas for monitoring
- Use SMF and RMF for tuning decisions
- Investigate HTTP and WebSphere for z/OS performance
- Describe the default UNIX thresholds that can be changed
- Tune the HFS and LE environment
- Trace performance problems to check WLM applications
- List tools available to monitor the application running in the JVM
- Use Tivoli Performance Viewer to monitor real-time performance of WebSphere for z/OS J2EE applications
- Understand the SMF records created by HTTP Server and the HTTP protocol
- Explain the different ways to configure the connection between the WebSphere for z/OS plug-in and a J2EE server instance when using the HTTP protocol
- Tune the HTTP session management function to use distributed session management
- Understand and implement WebSphere for z/OS Internal Replication services
- Describe the JAVA technology in z/OS
- Plan for the utilization of zAAP processors to reduce the cost of running WebSphere for z/OS workloads
- Quantify the possible utilization of zAAP processors by a specific installation WebSphere for z/OS workload
- Understand how garbage collection works and the Persistence Reusable JVM
- Tune the JAVA virtual machine
- Apply tuning to the WebSphere for z/OS runtime environment and understand the different behavior of runtime-dependent settings
- Use dynamic cache services to improve performance for Web applications 6.0
- Understand how Parallel Sysplex and WebSphere for z/OS clusters provide scalability and availability, cloning, and data sharing for WebSphere for z/OS

Participants

This intermediate course is for experienced z/OS systems programmers who are responsible for implementing and customizing the WebSphere V7.0 for z/OS on z/OS, as well as IT professionals.
responsible for the deployment of EJB and Web applications. You must have basic knowledge in measurement and analysis of performance data provided by z/OS, such as SMF, RMF, and TCP/IP.

Prerequisite(s)

You should have attended:

- WebSphere for z/OS Version 7 Implementation (ES68) or have equivalent knowledge before attending Maximizing WebSphere V7 Performance on z/OS (OZ85DK).

Programme

Day 1
- Welcome
- Unit 1: Overview of WebSphere performance tuning
- Unit 2: Workload simulation
- Lab 1: Prepare the Trade6 benchmark program
- Unit 3: z/OS Base
- Lab 2: WebSphere Studio Workload Simulation set up and use

Day 2
- Unit 4: External monitoring overview
- Unit 5: z/OS UNIX basic settings for WebSphere Application Server
- Lab 3: Tuning WLM for WebSphere
- Unit 6: Monitoring WebSphere for z/OS performance
- Lab 4: Tuning z/OS UNIX and its file system

Day 3
- Unit 7: IBM HTTP Server and WAS
- Unit 8: HTTP session tracking
- Lab 5: HTTP Transport Handler and FRCA
- Unit 9: JAVA technology on z/OS (part 1 of 2)
- Lab 6: Monitoring JVM, garbage collection, zAAP utilization, and capacity planning for zAAP

Day 4
- Unit 9: JAVA Technology on z/OS (part 2 of 2)
- Unit 10: WebSphere Application Server tuning
- Lab 7: WebSphere Performance Tuning
- Unit 11: Exploiting e-business topology

Day 5
- Unit 12: WebSphere software checklist and system checkup

Options

Roadmaps that reference this course are:

- z/OS UNIX® Services and WebSphere
- z/OS UNIX® System Services, Websphere and SAP