
Peter Enrico's Seminar: 'S/390 Java, J2EE, Web Serving, and WebSphere on z/OS Performance'

(Visit www.epstrategies.com for class schedule.)

Most common feedback: *"I finally get it!" and "This class ties it all together."*

Fact – WebSphere, Java, J2EE, and web services are not just the latest fads. They are the foundation for future e-business workloads on zArchitecture and S/390. The majority of all new workload growth on the S/390 (and z/Architecture) platform can be attributed in some way to Java, web serving, web application serving, and web services.

Fact — Understanding just your 'MVS', CICS, TSO, DB2, and IMS is no longer sufficient. To meet your service level objectives you now need to ensure optimal performance from your e-business environment, including your web applications and e-business workloads.

Fact — z/OS web application serving using WebSphere, and associated e-business workloads will be part of your z/Architecture and S/390 environments and consciousness from now on.

Fact - If you are looking for that base understanding of these relatively new technologies, as well as an assortment of performance recommendations, then this seminar is for you.

This 4.5 day seminar, developed and taught by Peter Enrico, will help you gain that required knowledge and understanding of e-business performance analysis in a z/Architecture environment. This seminar will teach you the basics of z/OS Java, J2EE, web application serving using WebSphere for z/OS, and web serving using the IBM HTTP Server.

Class Overview

The class begins with an overview of e-business environment on zArchitecture and S/390.

Next you will learn both the basics of Java on z/OS and the J2EE architectural standard. Most newly developed e-business workloads are developed in Java, and by attending this seminar you will gain a key understanding of how Java is implemented on z/OS and about Java performance management and tuning. You will also learn the basics of the J2EE standards. An objective of this section of the seminar is to ensure you can attend any web application implementation meeting back at your shop, and feel comfortable participating in the discussions and plans. This usefulness of the J2EE section of the seminar has drawn especially high praise from past attendees.

Once the foundation has been laid, you will then learn about the zArchitecture e-business environment and system components that make up the MVS web-serving environment. You will gain a working knowledge of the major USS and e-business facilities as they relate to the zArchitecture platform. This section of the class provides an overview of the IBM HTTP Web Server, WebSphere Application Server for z/OS, WLM management of web workloads, Java, LDAP, and a variety of other facilities and components that make up the S/390 e-business environment. Options for Linux on zArchitecture are also discussed. You will also learn the configuration options for WebSphere applications.

A portion of this class will also be devoted to providing an understanding of Web Services. You will become familiar with the objectives of XML, DTD, SOAP, WSDL, UDDI, and more.



The class then proceeds to help you develop a working knowledge of performance measurement and management of web workloads on z/OS. You will learn about the available WebSphere measurements, the flow of WebSphere transactions, and how to monitor and tune WebSphere workloads. This section includes the IBM HTTP Web Server, WebSphere Application Server, WLM goal mode evaluation for web workloads, and tuning tips for other components associated with web serving on the zArchitecture platform.

Class Participation

Prior to class enrolled students will be sent a note suggesting what configuration data, parameter members, and what measurement reports should be collected and brought to class. The purpose of this information is two fold. First, it ensures that each attendee is familiar with their current or planned USS, WebSphere, Java, and e-business environment. Second, parameter members and reports brought to class will be discussed and could be used to reinforce concepts learned. Peter is available before class, during breaks, and after class to discuss with each student their own environment.

Instructor

Having worked extensively in the MVS performance measurement and tuning area, and with Java and WebSphere on z/OS, as well as significant UNIX System Services application porting and benchmarking projects, Peter Enrico draws from his wealth of experience to help you understand the e-business performance on z/OS and OS/390 of Java, J2EE, WebSphere, HTTP Serving, Web Services. He is an effective instructor that will help you get your arms around performance management for your z/OS and OS/390 web application serving and e-business workloads. In this class Peter will provide instruction in the manner in which he is known - practical information relevant to your jobs and explained clearly.

This seminar is constantly being updated with the latest IBM announcements and the latest performance tuning and management techniques.

For More Information...

For more information on this or other seminars, including prices and locations, please contact:

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In-house

All seminars are available for in-house instruction.

Most common class feedback comment:

This seminar has been taught to a wide assortment of performance analysts, capacity planners, application performance analysts, and MVS system programmers. We are proud to say that we've been getting a great deal of positive and energetic feedback on this seminar. A paraphrase of the most common comments we get (even from those experienced with WebSphere) is as follows:

"I finally get it!"

"This class ties it all together."



Class Outline

The following is a high level outline for this seminar. Since the e-business technology on z/OS is constantly changing and evolving, actual seminar content and flow may vary slightly from this outline to reflect these same changes.

Part I: Introduction to e-business and e-business components on z/OS

This section of the class is great for management, project managers, developers, system programmers, and anyone with an interest in the subject of J2EE and web application serving.

Web serving and e-business on S/390 (zArchitecture) is a very broad area of study. This section of the seminar provides an overview of the primary e-business components and terminology. This overview is given in terms familiar to S/390 system programmers and performance analysts. The purpose of this section of the class is to give the attendee a working knowledge of the various components and each components role in e-business on S/390.

- Introduction to S/390 e-business
- Overview of e-business environment on z/OS
- Brief introduction to Object Oriented programming
- Introduction to JAVA on z/OS
 - Why Java is considered key to e-business on z/OS
 - Introduction to Java and the Java Virtual Machine
 - Understanding the Java runtime environment z/OS
 - Understanding and tuning the Java garbage collector on z/OS
 - Monitoring and tuning recommendations for Java runtime environment
- Introduction to Java 2 Enterprise Edition (J2EE) standards and application architectures
 - Java Applications, Applets, Servlets, JSPs, JavaBeans, Class Libraries, JVM, Methods, etc..
 - Introduction to Java 2 Enterprise Edition (J2EE) architecture
 - Services, Components, Containers, Connectors
 - Understanding EJBs and what makes them unique
 - Understanding Application architectures - Client Tier, Web Tier, EJB Tier, EIS Tier
 - Model-View-Controller (MVC) application architecture
- Introduction to the IBM HTTP Web Server on z/OS
 - Functions of a web server
 - Overview and implementation of the IBM HTTP Server on z/OS
 - IBM HTTP Server serving static web requests
 - IBM HTTP Server running CGIs, GWAPI programs, plug-ins
 - IBM HTTP Server modes - standalone mode and scalable mode
 - CICS Transaction Gateway (CTG)
- Introduction to WebSphere on z/OS
 - Functions of a web application server
 - Overview of WebSphere on z/OS – both V4.1.0 and V5
 - WebSphere on z/OS system components and system structure
 - Including supporting facilities such as RRS, LDAP, etc.
 - Configurations option for WebSphere on z/OS – both V4.1.0 and V5
 - Relevant to flow of transactions and performance
 - Server configurations, topologies, and migration scenarios – pros and cons
 - High level comparison between WebSphere on z/OS and WebSphere on Linux on zArchitecture
- Introduction to connectors in the z/OS environment
 - JDBC for DB2, VSAM, and IMS databases
 - JCA for CICS and IMS
- Introduction to Web Services
 - Introduction and objectives of XML, DTD, SOAP, WSDL, UDDI, and more
- Review of UNIX System Services (*optionally presented topics*)
 - Terminology relevant to later discussions and the S/390 e-business environment
 - A cookbook approach to tuning the UNIX System Services environment



Part II: WebSphere and Web Server for z/OS Performance Measurement, Management, and Tuning

There are great many considerations and paths one could take for optimal web server and web application performance. In S/390 and zArchitecture environments tuning and capacity issues must be considered for the IBM HTTP Web Server, WebSphere Application Server (Standard Edition and Enterprise Edition), TCP/IP, LDAP, SSL, JAVA, DB2, RRS, Logger, proper design of web pages, applications tuning, and much more. In fact, there is a whole cornucopia of areas to analyze and tune for optimal web performance.

This section of the seminar will focus only on the IBM HTTP Web Server and WebSphere Application Server performance tuning. As usual, primary goal is to not just provide the recommendations, but to understand why the recommendation exists.

- WLM management of Web Server and WebSphere workloads on z/OS
 - Introduction to WLM management of e-business workloads
 - Understanding scalable servers, application environments, enclaves
 - WLM management of IBM HTTP Server workloads on z/OS
 - WLM management of WebSphere workloads on z/OS
 - Recommendations and setup of WLM controls for e-business workloads
- Cookbook approach to tuning e-business workloads on z/OS
- System and subsystem tuning considerations for WebSphere for z/OS
 - WLM
 - Server topologies
 - System tuning considerations
 - Configuration parameters
 - Environmental variables
 - Java and the JVM
 - Language Environment
 - Some application tuning tips
- Measuring and monitoring WebSphere on z/OS
 - Understanding the flow of an WebSphere transactions on z/OS
 - Understanding the life, flow, and times of WebSphere transactions
 - Where response times, CPU times, and I/O counts are accumulated and why
 - Understanding WebSphere for z/OS measurements
 - Monitoring WebSphere for z/OS using traditional monitoring methods
 - Reading the RMF Workload Activity Report for WebSphere workloads
 - Introduction to SMF 120 records for EJBs and Web Container
 - Monitoring J2EE applications
 - Concepts of measuring and monitoring J2EE applications
 - Overview of some of the monitoring tools available
 - Demonstration of monitoring a J2EE application Introscope by Wily
 - Note: This is not an Introscope class. Nor is it a sales pitch of Introscope. However, we use Introscope to communicate the basics of monitoring a J2EE application
- System and subsystem tuning considerations for the IBM HTTP Server on z/OS
 - WLM
 - System tuning considerations
 - Configuration directives and parameters
 - Environmental variables
 - Language Environment
- Measuring and monitoring the IBM HTTP Server Environment
 - Understanding IBM HTTP Web Server Measurements
 - Introduction to SMF 103 records

