

z/OS Internals Workshop

Course Summary

Description

This course provides a detailed examination of z/OS for systems programmers. Topics include an introduction to z/OS architecture, system services and functions, storage management mechanisms, and I/O processes. Each section will also explore the associated control block structures associated with the z/OS operations being looked at. In addition, the student will become familiar with using the z/OS Data Areas documentation, and analyzing numerous dumps and trace data to gather information about problems.

Topics

- Introduction to Computer Systems Architecture
- z/OS Architecture
- System Initialization (IPL)
- System Services and Functions
- Storage Management Mechanisms
- I/O Processing
- z/OS Exploitation Opportunities
- z/OS Workload Management

Audience

This course is designed for experienced systems programmers with a need for a more detailed understanding of z/OS functions. .

Prerequisite

Due to the technical nature of this material, the student should have several years of experience in the z/OS environment.

Duration

Five Days

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Course Outline

- I. *Introduction to Computer Systems Architecture*
 - A. Examine processor architecture and its role in supporting z/OS facilities.
 - B. Introduction to storage hierarchy: L1 – L4 cache memories and various architectural enhancements to enable processors to achieve their rated speeds.
 - C. Review of processor power ratings and their associated metrics.

- II. *z/OS Architecture*
 - A. Interrupt handling and SVC functions
 - B. PSA, Fixed Storage, and the CVT
 - C. Address space structure
 - D. Cross memory services

- III. *System Initialization (IPL)*
 - A. IPL process details
 - B. IPL Program functions
 - C. Nuclear Initialization Program
 - D. Master Scheduler Initialization
 - E. Stand-alone dumps
 - F. IPL related problems

- IV. *System Services and Functions*
 - A. Role of z/OS Dispatcher
 - B. Task management
 - C. Dispatcher traces
 - D. Task and Contents Management Control Block relationships
 - E. Task management dump analysis

- V. *Storage Management Mechanisms*
 - A. Real storage management: Central and expanded storage usage
 - B. Virtual storage management: Paging/Swapping mechanisms
 - C. Auxiliary storage management
 - D. Storage traces
 - E. Storage Control Block relationships
 - F. Storage management dump analysis

- VI. *I/O Processing*
 - A. Components of I/O operation: Introduction to channel command processing
 - B. Access method services
 - C. I/O Tracing
 - D. I/O Control Block relationships
 - E. Data set internals
 - F. I/O and data set dump analysis

- VII. *z/OS Exploitation Opportunities*
 - A. Dataspaces/Hiperspaces
 - 1. Access register usage
 - B. Component traces

- VIII. *z/OS Workload Management*
 - A. Using SMF Type 99 records