

z/OS Fundamentals

Course Summary

Description

"This course provides an examination of z/OS for systems programmers, operators and application programmers. Topics include an introduction to the System Z systems hardware and an exploration of z/OS architecture, system services and functions, storage management mechanisms and I/O processes. In particular the focus will be to explore the operation of the z/OS environment with an objective of understanding its performance and exploitation opportunities. This course is the first week of z/OS Technical Bootcamp (PT5081) and includes both lecture and demonstration labs.

Students wishing to learn JES2, USS, REXX and SMP/E should considering alternatively attending the 10-day z/OS Technical Bootcamp (PT5081) or the follow on intensive courses on each of those topics."

Topics

- System Basics
- Programs
- History and Overview of z/OS
- The IPL Process
- System Services and PARMLIB
- Storage Management Mechanisms
- Task Management
- I/O Processing
- Access Methods and Data Bases
- Resource Management
- System Managed Storage
- Introduction to Basic Communication Services
- Introduction to z/OS Subsystems and Services

Audience

System programmers, operators and application programmers that need an understanding of the z/OS environment and the subsystems supported.

Prerequisites

z/OS (MVS) Skill Pack (PT2013) or equivalent experience with TSO/ISPF and JCL processing are required.

Duration

Five days

z/OS Fundamentals

Course Outline

- I. System Basics**
 - A. Examine how data is represented in computers, using binary, hexadecimal and decimal.
 - B. Introduction to memory addresses and basic instruction operation
 - C. Explore the role of the PSW in machine operations
 - D. Introduce basic computer hardware inventory: CPU, Memory and I/O devices
- II. Programs**
 - A. Examine basic program structure.
 - B. Introduction to Linkage Editor functions
 - C. Illustrate connection between data, JCL and programs
 - D. Introduction to basic TSO/ISPF and SDSF
- III. History and Overview of z/OS**
 - A. Evolution of operating systems from MVT/MFT to OS/390 and z/OS
 - B. Examining LPARs and parallel sysplex configurations
- IV. The IPL Process**
 - A. Review the IPL process
 - B. Steps in systems initialization
- V. System Services and PARMLIB**
 - A. Interrupts and interrupt handling
 - B. PARMLIB definitions related to system functions
 - C. System Address spaces
- VI. Storage Management Mechanisms**
 - A. Real storage management:
 - 1. Central and expanded storage usage
 - B. Virtual storage management:
 - 1. Paging/Swapping mechanisms
 - C. Auxiliary storage management
- VII. Task Management**
 - A. Review of initiator/terminator functions
 - B. Address spaces and task control
- VIII. I/O Processing**
 - A. Introduction to DASD hardware functions:
 - 1. CKD, ECKD, and FBA devices
 - 2. Parallel Access Volumes (PAV)
 - 3. Volume Affinity
 - B. Components of I/O operation:
 - 1. Introduction to channel command processing
 - C. Access method services
 - D. Caching mechanisms
- IX. Access Methods and Data Bases**
 - A. Data set organization and access methods:
 - 1. Sequential access (SAM)
 - 2. Basic Partitioned Access (BPAM)
 - 3. Basic Direct Access (BDAM)
 - 4. VSAM processing (ESDS, KSDS, RRDS)
 - B. Introduction to data base processing concepts
- X. Resource Management**
 - A. Examine basic objectives in managing system resources
 - B. Explore the process of defining objectives
 - C. Discuss the process WLM uses to make decisions and monitoring requirements
 - D. Scheduling environments
 - E. Intelligent Resource Director
- XI. System Managed Storage**
 - A. Introduce DFSMS concepts
 - B. Review SMS components
- XII. Introduction to Basic Communication Services**
 - A. Basic networking and configurations
 - B. TCP/IP overview and function
 - C. VTAM/SNA overview and function
- XIII. Introduction to z/OS Subsystems and Services**
 - A. Overview of JES2 operation and function
 - B. Introduction and overview to CICS and IMS
 - C. Additional subsystems including:
 - 1. Unix System Services (USS)
 - 2. Security
 - 3. Performance Management Software
 - 4. Diagnostics and Debugging Software