Course Outline

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 consider 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

Course Outline

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