z/OS System Anatomy Part 1 - Z Architecture Training

Duration: **4 Day**

BILGINC IT Academy
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This course and the associated Part 2 course together form the essential core of the z/OS education curriculum for z/OS Systems Programmers. By attending both components attendees will gain an in-depth insight into the fundamental structure of MVS (now z/OS), enabling further study in areas such as debugging, performance, installation and customisation of the operating system.
This course concentrates on laying the ground rules of z/OS in terms of architecture, storage management, as well as the major control blocks and how to interpret them. The course also introduces the major components found in z Systems environments.

This course is also available for one-company, on-site presentations and for live presentation over the Internet, via the Virtual Classroom Environment service.

Prerequisites

A good working understanding of the z/OS environment, from a technician's perspective.

What You Will Learn

- describe the architectural principles governing CPU, Storage and I/O
- identify the state of a CPU and describe potential problem scenerios
- use IPCS and the debugging guides
- describe the principles of Virtual Storage
- describe the purpose of AMODE and RMODE
- describe a page fault and its consequences
- set up a flexible paging/swapping subsystem
- explain how dataspaces and hiperspaces work
- describe how an IPL works
- isolate problems during an IPL
- explain the concept of authorised programs.

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Training Outline

Architecture

The architectural principles of the CPU; PSW, registers; interrupts system states; PSW swapping; multi-processing; central storage; addressing modes; storage keys; parallel & serial channels; pathing; HCD; LCUs; CCWs; I/O operation; SCSW.

MVS Introduction

The functions of the MVS operating systems; components required to prepare MVS for work; creating address spaces; Job Entry Subsystem; initiators; resource control; interrupt handlers and status saving; dispatching work; I/O requests; Workload Manager; execute the work; exit the work from the system.

Control Blocks, Dumps & IPCS

Using IPCS and the debugging handbooks to locate and interpret major MVS control blocks in a dump; finding main control blocks such as PSA, CVT, ASCB, TCB, UCB; main IPCS menus; IPCS FIND command; IPCS subcommands; IPCS labs.

Virtual Storage Concepts

Loading programs; real storage problems; DAT; segments & pages; page stealing & UIC; page faults; demand paging; dispatching address spaces; swapping & paging.

MVS Storage Management

AMODE & RMODE; common storage; private storage; Virtual Storage Manager; subpools; storage keys; RSM; page faults; segment faults; ASM; page data sets; VIO.

Dataspaces and Hiperspaces

Primary & secondary ASC modes; access registers; using dataspaces; VLF; Hiperspaces.

System Initialisation

Sysgen and IPL processes; the function of the LOAD parameter and the LOADxx member of PARMLIB; concepts of authorised programs; the subsystem interface.