# z/OS System Services Structure

## Duration: 5 Days  Course Code: ES20G

## Overview:

**This course presents the structure and control blocks of the z/OS BCP and system services.**

It prepares the z/OS system programmer to identify potential bottlenecks and performance problems, perform initial error symptom gathering, and identify opportunities and requirements for tailoring an z/OS system. This course also provides prerequisite information needed for further training in specialized areas such as system measurement and tuning and system problem determination.

## Target Audience:

This is an intermediate course for z/OS system programmers responsible for customization, measurement and tuning, or problem determination of z/OS. Subsystem programmers will also benefit from this class.

## Objectives:

- **After this course participants should be able to:**
- Explain the z/OS functions and control blocks necessary to support a task in a multitasking and multiprocessing environment
- Describe the software and hardware functions that allow a program to interact with programs running in other address spaces, use data in other address spaces, and use data in data spaces
- Trace the flow of an I/O operation from the initial request in the application program through the completion of data transfer
- Identify the control blocks that describe the current status of an I/O request
- Describe the functions of the z/OS Virtual, Real, and Auxiliary Storage Managers
- Describe the functions performed by the Recovery Termination Manager and recovery management components to minimize failure impact and enhance error correction
- Select the appropriate IBM publication to provide further technical information (SRLs, Technical Bulletins, Self-study and other z/OS courses)
- Describe the services provided by cross system extended services (XES)
- Identify and explain the purpose of the cache, list, and lock structures
- Plan the implementation of the global resource serialization STAR environment

## Prerequisites:

**Before taking this course, you should be able to:**

- Describe the following z/OS characteristics: multiprocessing, multiprogramming, virtual storage and paging, and multiple address space/data space architecture
- Explain how paging and swapping are accomplished through the interaction of real/central, expanded, auxiliary, and virtual storage in an z/OS system
- Explain the role of the dispatcher, interrupts, SVCs, the program manager, and serialization in managing work in an z/OS system
- State the role of z/OS software and hardware components in handling an I/O request for data on a direct access storage device

These prerequisites can be met through on the job training or completion of z/OS Facilities (ES15).

Note: A fundamental knowledge of hexadecimal notation,

## Testing and Certification

None

assembler language, and z/Architecture instruction execution will enhance a student's understanding of the course material. Completion of Assembler Language Coding Workshop or Assembler Language Series is recommended.

## Follow-on-Courses:

None

## Content:

System Introduction

- z/OS Review
- z/OS System Components Review
- Introduction to Control Blocks
- Basics of z/Architecture

Operating Environment Initialization

- System Libraries
- Initial Program Load

Task Management

- Task Dispatching
- Service Request Scheduling
- Program Managing
- Serializing Resources
- Supervisor Calls
- Status Saving on Interrupt

Addressability

- Addressability Review
- Cross Memory Services - Addressability to Two Address Spaces
- Extended Addressability to Multiple Spaces

Input/Output Supervisor

- I/O Definition and Initialization
- I/O Request Flow
- I/O Interrupt Flow
- Error Handling

Storage Management

- Storage Management Review
- A Programmer Use of Storage
- Paging and Swapping
- Coupling Facility Storage
- Exploitation

Recovery Termination Manager (RTM)

- RTM Overview
- Preparing the Environment
- Normal Termination Processing
- Abnormal Termination Processing
- Recovery Management Support

## Further Information:

For More information, or to book your course, please call us on Head Office Tel.: +974 40316639

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