



# BMC Mainframe: z/OS Concepts & Facilities

## COURSE ABSTRACT

### COURSE CODE

» MGRS-ZOCF-2021

### APPLICABLE VERSIONS

» Not Applicable

### DELIVERY METHOD

» Instructor-led Training (ILT)

### COURSE DURATION

» 2 Days

### PREREQUISITES

» BMC Mainframe: IBM Z Systems Environment - Introduced & Explained  
Or  
Equivalent knowledge is recommended, as is an understanding of TSO and JCL

### RECOMMENDED TRAININGS

» NA

## Course Overview

The course is developed and delivered by © RSM Technology.

The essential introduction to z/OS, this course provides a clearly explained technical view of IBM's Z Systems mainframe environment, with the emphasis on z/Architecture and z/OS, IBM's strategic mainframe operating system.

In addition, the course also provides a valuable overview of all the associated software and system components that comprise the complete system.

## Target Audience

All programmers, senior operations staff and other IS personnel requiring an understanding of z/OS.

## Learner Objectives

- » Describe the mainframe hardware components
- » Explain how I/O components are configured and used
- » Describe the main features of z/OS and its associated system software
- » Explain the relationship between the hardware and software
- » Explain the relationship between MVS and its associated components
- » Understand how to use an MVS system via TSO and batch jobs
- » Describe how data is managed by SMS



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### COURSE ACTIVITIES

- » Classroom Presentations
- » Demonstration


### BMC MAINFRAME INFRASTRUCTURE AND PLATFORMS LEARNING PATH

- » <https://www.bmc.com/education/courses/find-courses.html#filter/%7B%22type%22%3A%22edu-specific-types-159150236%22%7D>

### CERTIFICATION PATHS

- » This course is not part of a BMC Certification Path.

### DISCOUNT OPTIONS

- » Have multiple students? Contact us to discuss hosting a private class for your organization
- » [Contact us for additional information](#) 

## Course Modules

### The z/OS Platform

- » The components of a mainframe computer
- » Real Storage
- » Central Processing Unit (CPU)
- » Channel Subsystems (CSS)
- » What is a computer program?
- » A computer program needs memory
- » A Control Program
- » Multiple programs in memory
- » Multiprogramming
- » The concept of Interrupts
- » The purpose of an Operating System – summary
- » Middleware
- » The System z/architecture
- » MVS - z/OS operating systems
- » The history of MVS
- » Release cycle for z/OS
- » IBM zSeries processors
- » PR/SM
- » Logical Partitioning (LPAR)
- » CF partition
- » Logical Partitions
- » Resource distribution in LPAR mode

- » Parallel Sysplex
- » Coupling Facility (CF)

### I/O Devices in a z/OS Environment

- » Input/Output devices
- » Storage devices: Non-storage devices
- » The I/O configuration
- » I/O processing in principle
- » The channel concept
- » FICON
- » Control units, Device numbers, One control unit - many channels
- » Shared DASD
- » Tape devices
- » Tape robots
- » Virtual Tape
- » I/O devices – disk
- » Mainframe disks (DASD)
- » RAID devices
- » I/O configuration in an IBM- type mainframe
- » Hardware Configuration Definition (HCD)

### z/OS Overview

- » What hardware can do
- » Software responsibilities

- » z/OS - an operating system
- » z/OS components
- » z/OS - always in storage
- » Getting real work out of it
- » Initiators
- » The application program
- » Program Execution Environments
- » Running 'real' programs
- » Job Management
- » Resource Control
- » Allocation
- » Task Management
- » Program Management
- » Supervisor Services
- » Storage Management
- » I/O processing
- » Access Methods
- » IOS drivers
- » I/O Supervisor (IOS)
- » I/O processing
- » Workload Manager (WLM)
- » Recovery Termination Manager (RTM)
- » Abnormal termination – application
- » Sysplex

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- » Using sysplex
- » z/OS components that exploit sysplex
- » Other components that use sysplex
- » Parallel sysplex
- » Exploiting the parallel sysplex

### z/OS Data Handling

- » Data access methods
- » Data structure: VSAM, OAM, QSAM, BPAM
- » Batch systems access
- » Utilities: Text editor, Assembler, Compilers, Binder, Interpreters
- » Networks
- » Teleprocessing definition
- » Development of teleprocessing systems
- » Types of teleprocessing systems
- » Elements of a teleprocessing system
- » Application program
- » Teleprocessing access method
- » Communications controller
- » Mainframe networking protocols
- » SNA
- » TCP/IP

- » How is z/OS communications software packaged?
- » Importance of a teleprocessing system

### The Total Mainframe Software Package

- » Mainframe software control
- » A typical z/OS system
- » IBM system software
- » System Software in the z/OS environment
- » Required add-on products
- » DFSMS/MVS
- » Important operating system software
- » Communications system software
- » Network support in z/OS: SNA, TCP/IP
- » Transaction Managers and Data Base Systems
- » Terminal Monitor (TM) systems
- » Database systems
- » Application development tools
- » High level languages
- » Other z/OS related products

### Working with z/OS

- » Starting a TSO session

- » VTAM application selection
- » TSO logon panel
- » TSO logon procedures
- » ISPF primary options
- » UNIX support in z/OS
- » The Kernel address spaces
- » Using UNIX services
- » File systems
- » UNIX Shell
- » ISHELL ISPF panels
- » Batch processing
- » JCL statements
- » One or more jobs in a JCL stream
- » Getting a batch job into the system
- » Batch job queues

### Data Management

- » ICF catalogs
- » ICF components
- » ICF catalog layout
- » HSM functional overview
- » HSM working with SMS
- » SMS managed data