z/OS System Programmer Fundamentals

Duration: 5 Days   Course Code: ES40G

Overview:

This course is designed to describe the basic components that apply to all z/OS systems. It includes high level concepts that apply to the z/OS hardware platform and the z/OS software. It then provides a more detailed analysis, description and lab activities that can be applied to the system programmer role to maintain z/OS systems.

Discussion activities include: The POR, IPL process, JES implementation and operating environment, VTAM environment for TSO, ISPF, SNA and TCP/IP networking, RACF, ISPF/PDF and UNIX System Services. It defines the classic approach to data management in a z/OS system. It identifies various software products and utilities used to define, maintain, and manage catalogs and data sets in the z/OS environment. It also discusses Parmlib usage and requirements for system initialization and operation that include: System symbolics, WLM, SFM, RMF and system logger. Both single system and multi-system sysplex usage is identified. z/OS install, upgrade options, maintenance using SMP/E and I/O configuration requirements using HCD is listed and described.

Target Audience:

This intermediate class is intended for new System Programmers and System Administrators, who require an overall understanding of the z/OS platform, z/OS components, data management, and installation and maintenance activities used in z/OS systems.

Objectives:

- Describe the basics of z/OS architecture

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- Identify basic components of a z/OS system

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- Discuss what you have learned about LPARs

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- Describe maintenance principles

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- Identify and list the POR process

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- Describe the IPL process

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- Identify the basic address spaces

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- Describe how to shut down z/OS

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- Implement a basic JES2 batch environment

- Identify how work can be started in z/OS and it's relationship to the job entry subsystem

- IDCAMS utility

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- DFSMS: DFSMSdss, DFSMShsm

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- Data, storage, and management classes

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- Define the hierarchical data management

- HFS file system

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- zFS file system

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- Define load-parameters for IPL

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- Define symbols for use in system initialization

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- Define a configuration for system initialization

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- Define a library for procedures

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- Describe how JES2 prepares and executes work in z/OS

- Explain JES2 start options

- Describe JES2 parameters that can be customized to support z/OS batch

- Identify how communications and control of JES2 can be done using the operator commands and SDSF

- Describe JES3 configuration and job processing phases

- Identify JES3 start options

- Describe the two networking schemes in the z/OS environment: SNA and IP

- Identify SNA networking resources

- Explain how SNA sessions are established

- Describe the role of TCP/IP as a physical filesystem in UNIX System Services

- Implement and start a local VTAM instance to provide the base for SNA applications such as TSO

- Implement and start TSO

- Start a TCPIP stack and check accompanying messages

- Identify the main functions of Security Server (RACF) and the role it plays in controlling user access to the system

- Describe the contents of RACF user, group, and resource profiles

- Describe how RACF profiles are used to authorize user access to a data set resource

- Identify the sysplex resources required to run WLM

- List the main components that comprise a WLM service definition for a system/sysplex

- Describe the function of WLM service definition parameters such as workloads, service goals, periods, and WLM subsystems

- Describe how SMF data set are created and used

- Explain SMF record types and how they are used

- Identify the three RMF monitor types

- Describe how the RMF monitor is used for reporting purposes

- Identify System Logger components and usage for:

- Sysplex configuration and CF logstreams

- Single system and DASD-only logstreams

- Describe SMF usage of logstreams

- Describe the differences between IOCDS and IODF

- Identify and list the HCD definition process sequence

- Describe how the HCD dialogs are used to define a configuration

- Discuss the purpose of Hardware Configuration Manager

- Describe the overall concept of SMP/E: Global, target and DLIB zones

- Describe what elements and SYSMODs are

- Create an SMP/E working environment

- Identify two key members used for TCAS startup

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- Name the components of ISPF

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- Describe the general layout of ISPF/PDF panels

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- Describe how UNIX System Services are used in z/OS

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- Describe briefly the UNIX Shell and utilities and how they are accessed

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- Describe the application services provided in UNIX System Services

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- Describe how security is handled in UNIX System Services

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- Describe the classical z/OS data management

- DASD init: VTOC, VTOC index

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- ICF catalog creation: BCS, VVDS

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- MCAT/UCAT

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- Identify the batch and ISPF interfaces to SMP/E

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- Install a user function using RECEIVE, APPLY, and ACCEPT

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- Explain how to remove a SYSMOD with RESTORE

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- Describe the installation options available to install z/OS

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- Use the attributes of z/OS elements and features to identify the contents of a z/OS product

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- Describe the contents of the ServerPac offering and important install documentation sources

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- List the main steps in the ServerPac build process

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- Describe hardware and software prerequisites for performing a ServerPac installation in:

- The driving system

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- The target system

Prerequisites:

You should:

- Have z/OS installation experience or have attended z/OS Installation (ES41A)
- Be familiar with end user activities on MVS, including knowledge of JCL, IDCAMS, the MVS address space structure, and the concept of batch scheduling using JES initiators

Content:

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- Unit 9 - Hardware configuration definition
- Unit 10 - Software maintenance: SMP/E
- Unit 11 - Change management: ServerPac and other IBM services

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- Unit 4 - Networking, z/OS communication server
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- Unit 8 - System management: WLM, SMF, RMF, and system logger

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Further Information:

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