BMC Mainframe: Using HCD for I/O Configuration

COURSE ABSTRACT

COURSE CODE
» MGRS-UHIC-2021

APPLICABLE VERSIONS
» Not Applicable

DELIVERY METHOD
» Instructor-led Training (ILT)

COURSE DURATION
» 3 Days

PREREQUISITES
» Attendees should have a good understanding of z/OS at a conceptual level and the ability to use TSO/ISPF and JCL

RECOMMENDED TRAININGS
» NA

Course Overview

The course is developed and delivered by © RSM Technology.

The Hardware Configuration Definition (HCD) program is the I/O configuration tool for the z/OS environment. This course, designed for experienced z/OS Systems Programmers, will provide detailed and essential information on all aspects of HCD, as well as teaching the techniques required to design and implement an efficient z/OS I/O configuration.

The course includes as number of challenging hands-on practical exercises to reinforce the classroom sessions.

Target Audience

Systems Programmers and other technicians who need to understand how a z/OS I/O configuration is designed and implemented

Learner Objectives

» Describe the role of HCD with IOCP/MVSCP
» Use HCD panels to define a configuration comprising Processors, Logical Channel Subsystems, SubChannel Sets (LPARs and MIF), PCIe Functions, Channels (FICON, OSA, CF links, Hipersockets), Control Units and I/O devices
» Describe the constraints and issues in building an I/O configuration
» Understand the concept of Logical Control units and Parallel Access Volumes
» Define FICON directors
» Define the OS Configuration
» Define Eligible Device Tables (esoterics, tokens and generics)
» Define NIP consoles
» Create validated work IODFs
» Use the CHPID Mapping tool to include PCHIDs in the configuration
» Create production IODFs
» Plan and perform Dynamic I/O reconfigurations
» Use HCD functions to maintain the IODFs
» Migrate an IOCP

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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

Introduction to HCD

» I/O configuration principles
» Logical Channel Subsystems
» I/O configuration practicalities
» I/O configuration addressing
» Commands to display the status of channels and devices
» HCD definition process
» Objects managed by HCD
» LOAD member of PARMLIB
» IODF processing at IPL
» IPL & NIP LOAD messages

The HCD Dialogs

» HCD and ISPF
» HCD Primary Option Men
» Creating a new work IODF
» Sizing the work IODF
» Defining the new configuration menu
» Pull-down menu action bar
» GOTO pull-down menu
» Filter pull-down menu
» Backup pull-down menu
» Query pull-down menu
» Help pull-down menu
» Context menus
» PF keys
» Keyboard navigation

Creating a New Configuration

» Configuration structure
» Operating system definition
» Add an operating system
» Processor definition
» Add a processor
» Logical Channel Subsystems
» Multiple Logical Channel Subsystem
» Define processor support level
» LPAR definition flow
» Actions on selected processors (LPARs)
» Add Partition
» PCIe Functions
» Adding a new PCIe function
» Different types of PCIe Functions
» Channel Path definition
» Actions on selected Channel Subsystems
» Add a Channel Path
» Connect CHPID to LPAR
» Additional Channel Path Information
» Control Unit definition
» Add Control Unit
» Connect CU to Processor
» Actions on selected processors
» Connect CU to processor
» Logical Control Units
» Logical Control Unit definition
» Device definition
» Add Device
» Connect Device to Processor
» Define Processor Device Parameter
» Connect Device to Operating System
» Define OS Device parameters
» Maintaining IODFs
» Delete IODF option
» Copy IODF
» Selection
» View IODF option
» Parallel Access Volumes
» HyperPAV
» Enabling HyperPAV
» Define Eligible Device
» Creating a Validated Work IOD
» IODF Activation Menu
» IODF build messages – errors

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- IODF build messages -error actions
- IODF build messages - error explanation
- Validated work IODF name
- Build production IODF
- Print or Compare Configuration Data
- Print Configuration Reports option
- Report type selection
- Report filtering
- Print the activity log option
- View the activity log option
- View the activity log – output
- Compare IODFs option
- Compare IODFs report selection
- Filtering Processor Compare reports
- Filtering Switch Compare Reports
- Filtering OS Compare Reports
- Selecting Compare Report options
- Compare CSS/OS Views option
- Comparing hardware and software views

Defining Directors

- The Director
- Switch configurations
- Chained switch configurations
- Switch definition
- Sample configurations
- Switch definition
- Basic Fibre Channel Topology
- Actions on switches
- Switch Channel Path definition
- Actions on Processors
- Add Switch information to Channel Path
- Connect CHPID to LPAR
- Switch Control Unit definition
- Actions on Control Units
- Change Switch Control Unit
- Define Control Units attached to switch
- Add Control Unit (via switch)
- Connect CU to Processor
- Switch device definition
- Actions on Devices - Change Switch device
- Change Device
- Connect Device to Processor
- Connect Switch Device to Operating System
- Define OS Device Parameters
- Connect Switch Device to Operating System
- Device definition
- Cascaded FICON Switches

OSAs and Hipersockets

- Open Systems Adapter (OSA)
- OSA diagnostic device
- QDIO and non- QDIO
- OSA Express CHPID definitions
- Physical network links
- Adding an OSA Control Unit and device
- VTAM and TCP/IP definitions
- Adding OSAD device
- OSC/ICC
- Hipersockets
- Hipersockets definition
- CHPID Type IQD
- MTU sizes

Coupling Facility

- Coupling Facility
- Create a CF LPAR
- Coupling Facility links
- Types of Coupling Facility links
- Create CF Links
- Connect LPARs together
- Defining CIB Links
- Defining CS5 and CL5 links
- Structure Duplexing
- Connecting two CFs together
- Displaying the CF's connection

CHPID Mapping Tool

- CHPID mapping tool workflow
- Build IOCP input dataset
- IOCP input dataset
- The Chpid Mapping Tool
- CFR and IOCP files
- Mapping
- Process CU Priority
- PCHID to CHPID Intersects
- Export IOCP Input file
- IOCP with PCHIDs
- Migrate the configuration data
- Build IOCDS option
- Build IOCDS - file selection
- Build IOCDS - create file

Dynamic I/O

- Dynamic reconfiguration in operation
- Dynamic reconfiguration prerequisite
- Installed UIMs
- Device modification categories
- IODF processing at IPL
- Virtual Storage considerations
- Preparing for Dynamic Reconfiguration
- Activation Menu
- View Active Configuration
- Activation Scope messages
- Activation Main Menu
- Test Activate New Configuration
- Performing Dynamic Reconfiguration
- Activate New Configuration
- Dynamic activation in a sysplex
- Active Sysplex Member List
- Actions on Selected Systems
- Activate System Wide
- Activate commands
- Don't forget the applications

Batch Processing

- HCD as a batch job
- Printing reports in batch
- Comparing IODFs in batch
- Allocating & copying an IODF in batch
- Building an IOCDS in batch

Online Exercises

- There are extensive practical exercises throughout this course