

# IBM TD-ES88G - Exploiting the Advanced Features of RACF

Live Online oder Präsenz

Dauer: 32h00 Nr.: 30467

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course teaches you how to implement some of the advanced facilities available in RACF. Through a combination of classroom lecture and hands-on lab exercises, you will learn how to establish an RRSF environment, including using RRSF facilities to administer security of remote RACF databases from a single centralized location, allowing users to synchronize password changes among several associated userids, using RRSF facilities to automatically maintain synchronization of two or more separate RACF databases. Other major functions that you will study include RACF sysplex data sharing and sysplex communication, RACF support for z/OS UNIX, DB2 security using RACF, Network Job Entry (NJE) security, operator commands, program control and backup, recovery of the RACF database, PassTickets, digital certificatesand program signature.

### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This intermediate course is for Security personnel and RACF support personnel responsible for implementing RACF, administering RACF, or both.

#### Voraussetzungen

### **Prerequisites**

You should have:

• RACF administration skills (obtained by attending *Effective RACF Administration BE87* or *Basics of z/OS RACF Administration ES19*), or equivalent experience.

### **Trainingsprogramm**

### **Course Outline**

#### Day 1

- Welcome
- Unit 1 Introduction to RRSF Exercises 1-4
- Exercise 1 Defining RRSF nodes
- Exercise 2 Directed commands and password and passphrase synchronization
- Exercise 3 Remote administration
- Exercise 4 Automatic command and password direction

#### Day 2

- Exercises 1-4 review
- Unit 2 RACF sysplex support Unit 3 RACF security for DB2
- Exercise 5 Operator command security Unit 4 Command and console security

#### Day 3

- Unit 5 RACF support for z/OS UNIX
- Exercises 6-9
- Exercise 6 Add a z/OS UNIX user
- Exercise 7 Using the z/OS UNIX shell
- Exercise 8 Using the USS ISPF shell and ISPF 3.17 Udlist function
- Exercise 9 Access control lists (ACLs)

#### Day 4

- Exercises 6-9 review
- Unit 6 Controlling network job entry
- Unit 7 Backup and recovery of the RACF database Unit 8 Program control
- Unit 9 PassTickets
- Unit 10 Digital certificates
- Unit 11 Program signing and verification

### Objective

- Explain the features and benefits of the various advanced functions in RACF
- Decide what features should be implemented in your installation
- Identify any migration considerations associated with these functions
- List the tasks that must be performed to implement the advanced security features, and develop an implementation plan
- Make the definitions in RACF to implement the advanced security functions

### Schulungsmethode

# **Live Online Training**

8. Mai 2023 bis 11. Mai 2023

11. Sep 2023 bis 14. Sep 2023

28. Nov 2023 bis 1. Dez 2023



# IBM TD-CB69G - TCP/IP for z/OS Implementation Workshop

A Live Online oder Präsenz

Dauer: 40h00 Nr.: 30466

Preis : 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket : Auf Anfrage

### Wer sollte teilnehmen:

**Zielgruppe** 

Voraussetzungen

# **Trainingsprogramm**

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### Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 5. Mai 2023

3. Jul 2023 bis 7. Jul 2023

6. Nov 2023 bis 10. Nov 2023



# IBM TS629G - IBM Spectrum Protect 8.1.13 Advanced Administration, Tuning, and Troubleshooting

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30451

Preis : 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

IBM Spectrum Protect is an enterprise data protection solution designed to help you streamline your data protection processing, reduce the cost of storage, and provide the flexibility and security to meet any service level agreement. IBM Spectrum Protect optimizes storage utilization by using incremental forever as well as block-level backup and replication, policy-based data management, and an intuitive interface, the Operations Center.

In this course, you learn how the use of two or more Spectrum Protect servers provides more options for data movement in the environment, like replication to multiple targets. You also use IBM Cloud Object Storage to create a storage pool for backups and long-term retention. The bulk of the administrative tasks are performed using the Operations Center and Command Builder which provides a command line interface for all servers configured in the Operations Center. This course also includes scripting, performance tuning, protecting, and recovering the database and storage pools, and an introduction to IBM Spectrum Protect Plus.

The hands-on exercises are performed on three different IBM Spectrum Protect servers, two on Windows, and one on Linux, with additional systems added to provide the IBM Cloud Object Storage environment.

This course is the second in a two-course series. It is for Spectrum Protect administrators who are familiar with the daily management tasks on a single server, and focuses on incorporating more advanced features, including replication and use of cloud object storage. Basic concepts and installation are not covered in this course.

TS619G, the first course in the series, IBM Spectrum Protect 8.1.12 Implementation and Administration, covers installation and basic administration of a single server.

### Wer sollte teilnehmen:

### Zielgruppe

#### **Audience**

Implementers and administrators who have experience with IBM Spectrum Protect.

#### Voraussetzungen

### **Prerequisites**

You should be able to perform the following skills managing an IBM Spectrum Protect environment before taking this course:

- Explain the primary components of IBM Spectrum Protect
- Install a Spectrum Protect server, backup-archive client, Client Management Services, and Operations Center
- Complete initial configuration of the server and client
- Configure and manage client options
- Define and manage storage pools in a single server environment
- Launch and navigate the administrative and client interfaces
- Manage the IBM Spectrum Protect database and recovery log
- Create and manage storage pools and storage pool volumes
- Configure a media library and manage tape media
- Create policy to meet business requirements
- Back up, restore, archive, and retrieve client data
- Protect the IBM Spectrum Protect environment
- Schedule basic administrative tasks
- Monitor server and client messages and events

### **Trainingsprogramm**

### **Course Outline**

Unit 1 IBM Spectrum Protect in a multi-server environment

Unit 2 Storage pool management overview

Unit 3 Multi-server management

Unit 4 Long-term retention

Unit 5 Client functions and management

Unit 6 Daily maintenance and monitoring

Unit 7 Automation and scripting

Unit 8 Performance tuning

Unit 9 Troubleshooting and recovery

### **Objective**

- Describe the expanded functions of a multi-server IBM Spectrum Protect storage environment
- Manage storage pools and data movement across devices, containers, and cloud
- Implement server-to-server communications and replication
- Configure long-term data management using retention rules and retention sets
- Employ advanced client backup and recovery functions to enhance performance
- Perform daily maintenance and monitor activities to improve security and recoverability
- Automate daily processing using macros and scripts
- Work with tuning parameters for the Spectrum Protect server and client
- Troubleshoot common problems and perform disaster recovery operations
- Describe IBM Spectrum Protect Plus and additional products in the Spectrum portfolio

### Schulungsmethode

# **Live Online Training**

8. Mai 2023 bis 12. Mai 2023

10. Jul 2023 bis 14. Jul 2023

25. Sep 2023 bis 29. Sep 2023



### IBM QZC30G - IBM PowerVC 2.0 Workshop

Live Online oder Präsenz

Dauer: 32h00 Nr.: 30446

Preis : 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

IBM PowerVC for Private Cloud, an infrastructure-as-a-service (IaaS) offering, provides a self-service cloud portal for IBM Power Systems and is built on OpenStack. OpenStack is a collection of open source software projects that enterprises or service providers can use to setup and run their cloud compute and storage infrastructure. IBM PowerVC for Private Cloud provides an easy way to provision and manage virtual machines on IBM PowerVM based systems in a private or hybrid cloud setting. It comes in two versions, a standard edition and a cloud edition. This course aims to provide an overall understanding of how to install and configure IBM PowerVC Standard Edition and IBM PowerVC for Private Cloud, in an environment with HMC and IBM PowerVM NovaLink. The hands-on lab covers exercises from the basics of installing IBM PowerVC to performing advanced administrative tasks. The course also clarifies concepts in planning, deploying, and implementing IBM PowerVC for Private Cloud and IBM PowerVM NovaLink based on technology standpoints, product architectures, and their benefits.

### Wer sollte teilnehmen:

### **Zielgruppe**

#### **Audience**

This training is for technical support individuals, system administrators, system architects, engineers, and pre-sales technical support staff who implements PowerVC as a virtualization manager.

#### Voraussetzungen

#### **Prerequisites**

Students must already know the basics of configuring and managing a virtual I/O server and virtual devices as well as know how to use the HMC to manage partitions. This prerequisite can be met by attending the following course:

AN30G Power Systems for AIX - PowerVM I: Implementing Virtualization

### **Trainingsprogramm**

### **Course Outline**

#### Course AgendaDay 1:

- Unit 1: Introduction to IBM PowerVC and OpenStack
- Unit 2: Planning for IBM PowerVC
- Unit 3: Installation and upgrade of IBM PowerVC
- Exercise 1. Verification of prerequisites
- Exercise 2. Installation of IBM PowerVC
- Exercise 3. Adding hosts and virtual machines to IBM PowerVC
- Exercise 4. Upgrading to IBM PowerVC for Private Cloud and Installing Fix Packs

#### Day 2:

- Unit 4: IBM PowerVC user interfaces
- Unit 5: IBM PowerVC administrative tasks
- Exercise 5. Using the IBM PowerVC user interfaces
- Exercise 6. IBM PowerVC for Private Cloud administration
- Exercise 7. Working with OpenStack projects, policies, and users

#### Day 3:

- Unit 6: Transitioning to cloud computing
- Unit 7: Features of IBM PowerVC for Private Cloud
- Unit 8: Managing Images and Virtual Machines with IBM PowerVC for Private Cloud
- Exercise 8. Live and Regular Capture to Create Images and Deploy Templates
- Exercise 9. Self-service Provisioning with IBM PowerVC for Private Cloud
- Exercise 10. Metering and REST APIs
- Exercise 11. Stopping and removal of resources

#### Day 4:

- Unit 9: Introduction to IBM PowerVM NovaLink
- Unit 10: Planning and Installing IBM PowerVM NovaLink
- Unit 11: Using IBM PowerVM NovaLink with IBM PowerVC for Private Cloud
- Exercise 12. (Shared Exercise) Installation of IBM PowerVM NovaLink
- Exercise 13. (Shared Exercise) Integration of IBM PowerVC for Private with IBM PowerVM NovaLink
- Exercise 14. (Shared Exercise) Capture and Deploy using IBM PowerVM NovaLink

### **Objective**

- After completing this course, you should be able to:
- Summarize the key functions and benefits of IBM PowerVC.
- Perform installation and configuration of IBM PowerVC, including upgrading to newer versions.
- Recognize the hardware and software requirements of IBM PowerVC.
- Demonstrate an understanding of cloud computing from a technology standpoint.
- Summarize the architecture of IBM PowerVC for Private Cloud.
- Summarize the key components of OpenStack and their functions.
- Demonstrate an ability to access and interact with the graphical and command line interfaces of IBM PowerVC for Private Cloud.
- Summarize the concepts of creating new projects, users, networking configuration and other cloud related

properties.

- Summarize the key administrative tasks that need to be performed after the installation of IBM PowerVC for Private Cloud.
- Summarize the architecture of IBM PowerVM IBM PowerVM NovaLink.
- Integrate IBM PowerVC for Private Cloud with IBM PowerVM IBM PowerVM NovaLink and the existing virtualization environment.

# Schulungsmethode

# **Live Online Training**

24. Jul 2023 bis 27. Jul 2023

6. Nov 2023 bis 9. Nov 2023



# IBM TS619G - IBM Spectrum Protect version 8.1.12 Implementation and Administration

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30439

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

IBM Spectrum Protect 8.1.12 is a data backup and recovery solution designed to help you manage your data retention, reduce the cost of storage, and provide appropriate recovery point objectives to meet any service level agreement. IBM Spectrum Protect offers improved efficiency and flexibility using object-based data management and policy driven retention.

This five-day course will focus on implementation and basic administration of an IBM Spectrum Protect environment. The hands-on lab exercises are performed on a Windows 2016 environment. The course materials include examples of AIX and Linux commands, when different from Windows.

### Wer sollte teilnehmen:

### **Zielgruppe**

### **Audience**

Implementers and administrators who are new to IBM Spectrum Protect data management

#### Voraussetzungen

### **Prerequisites**

Ability to navigate Windows 2016

A basic understanding of concepts regarding client/server relationships

### **Trainingsprogramm**

### **Course Outline**

Unit 1: Concepts and components

Unit 2: Installation and configuration

Unit 3: Interfaces and monitoring

Unit 4: Storage pools and devices

Unit 5: Policy management, data movement, and expiration

Unit 6: Server database and storage pool management

Unit 7: Client configuration and management

Unit 8: Client data protection

Unit 9: Daily operations and maintenance

Unit 10: Schedules and reports

### **Objective**

- Describe the purpose of IBM SpectrumProtect
- Install and configure the IBM Spectrum Protect components
- Use the administrative and client interfaces
- Discuss storage methodology options and create storage pool
- Customize data movement and retention policies to meet business requirements
- Configure the IBM Spectrum Protect database and storage pools for protection
- Optimize client configuration
- Perform backup, restore, archive and retrieve operations
- Organize daily tasks required to protect the IBM Spectrum Protect environment
- Automate and monitor client and administrative tasks and events

### **Schulungsmethode**

# **Live Online Training**

24. Apr 2023 bis 28. Apr 2023

10. Jul 2023 bis 14. Jul 2023

11. Sep 2023 bis 15. Sep 2023



# IBM TSP13G - IBM Spectrum Protect Plus 10.1.8 Implementation and Administration

🙎 Live Online oder Präsenz

Dauer: 32h00 Nr.: 30438

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

In this four-day course, you learn about installation, configuration and administration of IBM Spectrum Protect Plus v10.1.8. This begins with a review of the software features and functions, and the basic requirements, including architecture and data movement, and upgrade of the various components. Then, through lecture and hands-on labs, you learn how to deploy an environment as a virtual appliance or as a set of containers. You add providers and create customized SLA policies with options. You associate providers with policy to protect data in file systems and virtual machines, a variety of applications and databases, and Kubernetes and OpenShift containers. You configure and manage user access to the system and to the providers you protect. You manage jobs, plan and prepare for disaster recovery, view log files for monitoring and troubleshooting, and create custom reports.

### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

Implementers and administrators who are protecting virtual environments, containers and applications in a hybrid cloud environment

#### Voraussetzungen

### **Prerequisites**

- Experience with data protection
- Familiarity with Windows and Linux operating systems
- Some experience with virtualization, cloud storage, and containerized workloads
- An understanding of IBM Spectrum Protect administration

### **Trainingsprogramm**

### **Course Outline**

- Unit 1: IBM Spectrum Protect Plus introduction
- Unit 2: Installation and configuration
- Unit 3: Data protection for virtual machines
- Unit 4: Application protection
- Unit 5: Container and file system protection
- Unit 6: Long-term retention
- Unit 7: Disaster recovery
- Unit 8: Daily operations, maintenance, and reporting

### **Objective**

- Describe features and functions, and use the sizer too
- Install and configure the server, vSnap, VADP proxy, and configure SLA Policies
- Protect virtual machines
- Protect databases and applications
- Protect data in containers and on physical systems
- Perform tasks necessary for disaster recovery
- Archive data for long-term retention and regulatory compliance
- Manage daily operations and troubleshooting
- · Manage daily operations and troubleshooting

### **Schulungsmethode**

# **Live Online Training**

27. Mär 2023 bis 30. Mär 2023 Garantietermin 26. Jun 2023 bis 29. Jun 2023

28. Aug 2023 bis 31. Aug 2023

9. Okt 2023 bis 12. Okt 2023



## **IBM ESX3G - IBM Data Privacy Passports**

🙎 Live Online oder Präsenz

Dauer: 16h00 Nr.: 30433

Preis: 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Data privacy is critical to you, but it has never been more challenging to maintain. Applications are spread across onpremises and cloud platforms, including sensitive data that needs to be protected everywhere. How can you protect your data after it leaves the system of record?

- Your sensitive data might already be protected with encryption on a trusted system of record, such as the IBM® Z. However, as soon as that data leaves the confines of the trusted system of record, several questions immediately come to mind:
- Can data privacy and protection be maintained and enforced?
- Your system of record is trusted to maintain data privacy and protection. When shared, sensitive data that was encrypted is decrypted, copied, and may or may not be reencrypted before it is stored. After it is taken from that system, data protections must remain intact. Adequate controls to retain end-to-end data privacy and protection must be available.
- Can access to data be revoked?
- Your sensitive data must always be protected, compliance must be guaranteed, and consent must be respected. If conditions that are related to your sensitive data change, such as access or use, the ability to respond and comply must be possible.
- Is data privacy and protection provable?
- Information about data access, use, and policies must be readily available for auditing purposes. In addition, time that is spent by your security staff, auditors, and developers to administer and prove proper data privacy and protection is in place, should be minimized.
- To help you safeguard your sensitive data and provide ease of auditability and control, IBM introduced a new capability for IBM Z® called IBM Data Privacy Passports. It can help minimize the risk and impact of data loss and privacy breaches when collecting and storing sensitive data. Data Privacy Passports can manage how data is shared securely through a central control of user access.
- Data Privacy Passports can protect data wherever it goes. Security policies are kept and honored whenever the data is accessed. Future data access may be revoked remotely via Data Privacy Passports, long after data leaves the system of record, and sensitive data may even be made unusable simply by destroying its encryption key.
- Data Privacy Passports is designed to help reduce the time that is spent by staff to protect data and ensure privacy throughout its lifecycle via a central point of control.

- IBM Data Privacy Passports extends your data security in several ways. This includes protecting sensitive data, even when it is shared over diverse environments, preventing unauthorized access, and enhancing data privacy within a trusted environment.
- This course will demonstrate how Data Privacy Passports will provide privacy protection to your environment and assist with your security strength in depth strategy.
- In this course you will learn how leveraging the Data Centric Audit and Protection (DCAP) capabilities of IBM Data Privacy Passports can help safeguard all sensitive data to comply with data privacy regulations, minimize the amount of sensitive data needlessly shared within the organization and to 3rd parties, ease the burden of manual and cumbersome audits, revoke access to sensitive data, and ultimately have full control over the protection of your data wherever it goes.

#### **Important**

This course consists of several independent modules. The modules, including the lab exercises, stand on their own and do not depend on any other content.

Exercises and recorded demos reinforce the concepts and technologies being covered in the lectures.

### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This class is intended for z/OS & Linux on z system programmers and IT specialists in charge of configuring, implementing and deploying DPP under z15.

#### Voraussetzungen

### **Prerequisites**

- General z15 and/or LinuxONE III architecture knowledge
- Basic knowledge of linux or linux on z
- Basic knowledge of linux command line interface (CLI)

# Trainingsprogramm

#### **Course Outline**

Unit 1. Introduction to DPP and Data Privacy

- •IBM Data Privacy Passports: The solution to Data Privacy
- -Data Privacy
- -Data Privacy Challenges
- -Data Security and Data Privacy
- -Data Centric Protection
- -IBM z15: Data protection and privacy
- -IBM Z: Pervasive Encryption

- -Data Privacy Passports: Introduction
- -IBM Z Data Privacy Passports Offering
- -IBM Hyper Protect Virtual Servers
- -Protecting data moving through the enterprise
- -Protected data versus Enforced data
- -What are the flows for enforcement on data
- -Data Access Revocation
- •DPP architecture: Policy, protection and enforcement
- -Components of DPP
- -Key components of IBM Data Privacy Passports
- -Policy
- -TDO
- -Trust Authority
- -Passport Controller
- -Key Management
- •Data Privacy Passports Use cases
- Data Privacy Passports: Designing your solution
- •Useful Links and Resources
- Data Privacy Passports Resources

#### Unit 2. Installing and deploying DPP

- •Planning for DPP
- •DPP Deployment via HPVS
- •Installation Prerequisites
- Data Privacy Passports Product Roadmap
- •Configuring the HPVS LPAR
- -Main Architecture overview and requirements
- -Configuring the client
- -package manager machine
- -Package Manager Setup
- -IBM Hyper Protect Virtual Servers download image
- Deploying the IBM Data Privacy Passports appliance in the HPVS Appliance.
- -logon to the SSC Container web-UI
- -configure network and disk storage
- -DPP Appliance Deployment
- -Create the DPP containers and quota groups
- -Policy upload
- -Testing that IBM Data Privacy Passports is successfully deployed
- -TLS and LDAP configuration
- •Configuring and using IBM Data Privacy Passports.
- -use DPP REST APIs
- -register and invoke an API
- -Key creation
- -Upload a policy
- -Sign a policy
- -Start a policy
- -Manage keys

Unit 3. IBM Data Privacy Passport: Policy and Interfaces

- -The DPP Policy
- -Design your sample policy
- -Users and groups

- -Policy Elements Data Elements
- -Data Elements Protection
- -Cryptographic Keys
- -Data Elements Enforcement
- -Functional Roles & Groups
- -General Configuration Options
- -Defining Database Connections
- -Policy Management
- -Data Privacy Passports: Programming interfaces
- -JDBC
- -SQL
- -REST APIs
- -REST API Usage Patterns

Unit 4. IBM Data Privacy Passport: Data protection & Data enforcement

- -Trusted Data Objects
- -Structure of Trusted Data Objects
- -Working with TDOs: Source and Target DBMS
- -Using Protected Tables
- -Static Enforcement
- -Dynamic Enforcement
- -Revocation of Protected Data
- -Recovery of Protected Data
- -DPP policy: an example

### **Objective**

After completing this course, you should be able to:

Describe the DPP architecture: Policy, protection and enforcement

- •You will be able to Design a DPP solution to protect data moving through the enterprise
- •You will be able to explain the difference between Protected data versus Enforced data
- •You will be able to describe the components Data Privacy Passports (DPP)
- Policy
- TDO
- Trust Authority
- Passport Controller
- •You will be able to plan the resources required to setup DPP
- •You will be able to configure and implement a DPP instance inside an HPVS LPAR
- •You will be able to manage a DPP instance:
- Start and connect to your DPP instance
- Access your DPP controller and issue commands
- Manage keys
- Revoke Data Access
- Define and start a DPP policy
- Use DPP Programming interfaces: JDBC SQL REST APIs
- -Work with TDOs: Source and Target DBMS

# Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 2. Mai 2023

3. Jul 2023 bis 4. Jul 2023

18. Sep 2023 bis 19. Sep 2023

11. Dez 2023 bis 12. Dez 2023



### IBM ESX0G - IBM z/OS Container Extensions zCX

Live Online oder Präsenz

Dauer: 16h00 Nr.: 30432

Preis: 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

- z/OS Container Extensions (zCX), a new entitled capability of z/OS 2.4, ushers in a new era ofhybrid computing supporting running Linux applications directly on z/OS.
- IBM® z/OS® Container Extensions (IBM zCX) makes it possible to run Linux on IBM Z®applications that are packaged as Docker container images on z/OS. Application developers candevelop and data centers can operate popular open source packages, Linux applications, IBMsoftware, and third-party software together with z/OS applications and data.

### Wer sollte teilnehmen:

#### Zielgruppe

### **Audience**

This class is intended for z/OS system programmers and IT specialists incharge of configuring, implementing and deploying zCX under z/OS 2.4- This class is also intended for Application developers who will deploy dockercontainers in a zCX z/OS container extensions instance

#### Voraussetzungen

### **Prerequisites**

- General z/OS knowledge, including basic UNIX System Services skills- Basic knowledge of RACF- Basic knowledge of z/OSMF and workflowsTBD

### **Trainingsprogramm**

### **Course Outline**

- In this course we will learn the capabilities and benefits of zCX.- You will plan, configure and implement a zCX instance with z/OSMF workflows- You will learn how to use z/OSMF to setup and configure zCX- Create, provisioning, and deploying a zCX instance- Use z/OSMF workflows to manage the lifecycle of a zCX instance, deprovision a zCX instance- Use reconfiguration workflow to increase/decrease resources for zCX instance- Using zCX Command Line Interface, you will- Get familiar with the docker CLI- Explore installing zCX containers within newly provisioned zCX instance- provision and deploy application containers using zCX docker CLI commands- Explore how to cluster zCX applications for higher availability and load balancing- Operationally control zCX- Dockerize your Applications for z/OS Container Extensions- Create Docker volumes for data persistence, monitor and manage your zCX instance and containers- Implement a zCX private secure registry to deploy your own containers- Exercises and recorded demos reinforce the concepts and technologies being covered in the lectures.

### **Objective**

- Describe the components of z/OS Container Extensions (zCX)- Plan the resources required to setup zCX- Configure and implement a zCX instance with z/OSMF workflow- Start and connect to your zCX instance- Access your zCX CLI Container and issue Docker commands- Provision and deploy application container using zCX docker CLI- Create Docker volumes for data persistence- Monitor and manage your zCX instance and your containers- Deploy some use-case applications in zCX containers- Understand the Security considerations for zCX and containers- Setup zCX user management and authentication- Implement clustering and orchestration of zCX instances and container- Understand how to to Dockerize your Applications for z/OS Container Extensions- Implement a zCX private secure registry to deploy your own containers- Position zCX in the world of Hybrid Cloud- Select workloads for zCX- Determine which application is a good fit for zCX- Describe some zCX use-cases

### Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 2. Mai 2023

3. Jul 2023 bis 4. Jul 2023



# **IBM AN11G - Power Systems for AIX I: LPAR Configuration and Planning** R Live Online oder Präsenz

Dauer : 24h00 Nr. : 30055

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Learn how to perform system administration in a Power Systems environment. Learn about the features of PowerVM Editions and how to configure and manage LPARs running AIX V7 or Linux using the Hardware Management Console (HMC).

### Wer sollte teilnehmen:

#### Zielgruppe

### **Audience**

This course is appropriate for system administrators, technical support individuals, and IBM business partners who implement LPARs on IBM Power Systems.

#### Voraussetzungen

### **Prerequisites**

This introductory course does not require any logical partitioning experience.

General TCP/IP knowledge is strongly recommended.

### **Trainingsprogramm**

### **Course Outline**

#### Day 1

- Welcome
- Unit 1: Introduction to partitioning
- Exercise 1: Introduction to partitioning

- Unit 2: Hardware system overview
- Exercise 2: System hardware components
- Unit 3: Hardware Management Console

#### Day 2

- Unit 3: Hardware Management Console (continued)
- Exercise 3: Exploring the HMC V8 interface
- Unit 4: Hardware Management Console maintenance
- Exercise 4: HMC and managed system maintenance
- Unit 5: System power management
- Exercise 5: System power management
- Unit 6: Planning and configuring logical partitions

#### Day 3

- Unit 6: Planning and configuring logical partitions (continued)
- Exercise 6: Configuring logical partitions
- Unit 7: Partition operations
- Exercise 7: Partition operations
- Unit 8: Dynamic LPAR operations
- Exercise 8: Dynamic LPAR operations

### **Objective**

- Describe important concepts that are associated with managing POWER processor-based systems, such as logical
  partitioning, dynamic partitioning, virtual devices, virtual processors, virtual consoles, virtual local area network
  (VLAN), and shared processors
- Describe the features of the PowerVM editions
- Describe the functions provided by the HMC
- Configure and manage the HMC, including users and permissions, software, start and shutdown, remote access features, network configuration, security features, HMC backup and restore options, and the HMC reload procedure
- Describe the rules that are associated with allocating resources, including dedicated processors, processing units for Micro-Partitioning, memory, physical and virtual I/O for AIX and Linux partitions
- Configure and manage LPARs by using the HMC graphical user interface (GUI) and HMC commands
- Power on and power off the Power Systems server
- Use the HMC to back up and restore partition data
- Perform dynamic LPAR operations (DLPAR)

### **Schulungsmethode**

# **Live Online Training**

4. Apr 2023 bis 6. Apr 2023

8. Mai 2023 bis 10. Mai 2023

6. Jun 2023 bis 8. Jun 2023

4. Jul 2023 bis 6. Jul 2023

7. Nov 2023 bis 9. Nov 2023



# IBM AN12G - Power Systems for AIX II AIX Implementation and Administration

Live Online oder Präsenz

Dauer: 40h00 Nr.: 30387

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Learn to install, customize, and administer the AIX operating system in a multiuser Power Systems partitioned environment. The course is based on AIX 7.2 running on a Power Systems server managed by Hardware Management Console and provides practical discussions that are appropriate to earlier AIX releases.

### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This intermediate course is intended for system administrators or anyone implementing and managing an AIX operating system in a multiuser Power Systems partitioned environment.

#### Voraussetzungen

### **Prerequisites**

You should already be able to:

- Log in to an AIX system and set a user password
- Execute basic AIX commands
- Manage files and directories
- · Use the vi editor
- Use redirection, pipes, and tees
- Use the utilities find and grep
- · Use the command and variable substitution
- Set and change Korn shell variables
- Write simple shell scripts

These skills can be acquired by attending AIX Basics (AN10G) or through equivalent AIX or UNIX knowledge. Also, it

would be helpful (but not mandatory) if students were familiar with partitioning concepts and technology taught in *Power Systems for AIX I: LPAR Configuration and Planning (AN11G)*.

### **Trainingsprogramm**

### **Course Outline**

#### Day 1

- Welcome
- Unit 1: Introduction to IBM Power Systems, AIX, and system administration
- Exercise 1: Introduction to IBM Power Systems, AIX, and system administration
- Unit 2: AIX system management tools
- Exercise 2: Using system management tools in AIX
- Unit 3: System startup and shutdown
- Exercise 3: System startup and shutdown
- Unit 4: AIX installation
- Exercise 4: AIX installation

#### Day 2

- Unit 5: AIX software installation and maintenance
- Exercise 5: AIX software installation and maintenance
- Unit 6: System configuration and devices
- Exercise 6: System configuration and devices
- Unit 7: System storage overview
- Exercise 7: System storage overview: LVM commands
- Unit 8: Working with the Logical Volume Manager
- Exercise 8: Working with LVM

#### Day 3

- Unit 9: File systems administration
- Exercise 9: File system administration
- Unit 10: Paging space
- Exercise 10: Page space
- Unit 11: Backup and restore
- Exercise 11: Backup and restore

#### Day 4

- Unit 12: Security and user administration: Part one
- Exercise 12: Security and user administration: Part one
- Unit 13: Security and user administration: Part two
- Exercise 13: Security and user administration: Part two
- Unit 14: Scheduling and time
- Exercise 14: Scheduling
- Unit 15: TCP/IP networking

#### Day 5

- Unit 15: TCP/IP networking (continued)
- Exercise 15: TCP/IP networking
- Unit 16: Introduction to Workload Partitions

• Exercise 16: Workload Partitions

### **Objective**

- Install the AIX operating system, filesets, and RedHat Package Manager (RPM) packages
- Perform system startup and shutdown
- Discuss and use system management tools such as System Management Interface Tool (SMIT)
- Manage physical and logical devices
- Discuss the purpose of the logical volume manager
- Perform logical volume and file system management
- Create and manage user and group accounts
- Perform and restore system backups
- Utilize administrative subsystems, including cron to schedule system tasks, and security to implement customized access of files and directories
- Configure TCP/IP networking
- Configure and conduct Live Kernel Updates on a running AIX LPAR

### Schulungsmethode

# **Live Online Training**

15. Mai 2023 bis 18. Mai 2023

10. Jul 2023 bis 13. Jul 2023

11. Sep 2023 bis 14. Sep 2023

13. Nov 2023 bis 16. Nov 2023



# IBM AN14G - AIX Jumpstart for UNIX Professionals

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30187

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Provide focused training for experienced UNIX administrators on how to install, customize, and administer the AIX operating system in a multiuser POWER (System p) partitioned environment. The course is based on AIX 7.1 running on a Power system managed by Hardware Management Console version 7 and provides practical discussions that are appropriate to earlier AIX releases.

### Wer sollte teilnehmen:

#### Zielgruppe

#### **Audience**

This intermediate course is intended for experienced UNIX system administrators who need training to support their transition to supporting AIX running on POWER processor based systems in a multiuser POWER (System p) partitioned environment.

#### Voraussetzungen

### **Prerequisites**

You should be able to use basic UNIX commands to:

- Execute basic AIX commands
- Manage files and directories
- Use the vi editor
- Use redirection, pipes, and tees
- Use the utilities find and grep
- Use command and variable substitution
- Set and change Korn shell variables
- Write simple shell scripts

The above skills can be acquired by attending AIX Basics (AU130) or (AN100) or through equivalent AIX/UNIX

#### knowledge.

In addition, you are expected to have hands-on experience administering a UNIX operating system (such as Solaris, HP/UX, and others) including:

- User management and system security
- Storage
- Networking
- System shutdown and restart
- Backup and recovery
- System task scheduling

### **Trainingsprogramm**

# **Course Outline**

#### Day 1

- Welcome
- Unit 1: Introduction to AIX and IBM Power systems
- Exercise 1: Introduction to AIX and IBM Power systems
- Unit 2: AIX system management tools
- Exercise 2: Using system management tools in AIX
- Unit 3: AIX software installation and maintenance
- Exercise 3: AIX software installation and maintenance
- Unit 4: System configuration and devices
- Exercise 4: System configuration and devices

#### Day 2

- Unit 5: TCP/IP networking
- Exercise 5: TCP/IP implementation
- Unit 6: System startup and shutdown
- Exercise 6: System startup and shutdown
- Unit 7: Basics of configuring logical partitions
- Exercise 7: Configuring logical partitions
- Unit 8: AIX installation
- Exercise 8: AIX installation
- Unit 9: Working with the Logical Volume Manager

#### Day 3

- Exercise 9Working with LVM
- Unit 10: File systems administration
- Exercise 10: File systems administration
- Unit 11: The Object Data Manager
- Exercise 11: The Object Data Manager
- Unit 12: LVM metadata
- Exercise 12: LVM metadata issues
- Unit 13: Disk management procedures
- Exercise 13: Disk management procedures

#### Day 4

- Unit 14: Backup and restore
- Exercise 14: Backup and restore
- Unit 15: Error monitoring
- Exercise 15: Error monitoring
- Unit 16: System initialization I
- Exercise 16: System initialization I (Parts 1-3)

#### Day 5

- Exercise 16: System initialization I (Part 4)
- Unit 17: System initialization II
- Exercise 17: System initialization II
- Unit 18: The AIX system dump facility
- Exercise 18: System dump
- Unit 19, Topic 1: Alternate disk installation
- Exercise 19, Topic 1: Alternate Disk
- Unit 19, Topic 2: Using multibos
- Exercise 19: Topic 2: multibos
- Optional Appendix A: Survey of additional AIX facilities
- Optional Appendix B: Printers and queues

# **Objective**

- Install the AIX operating system, filesets, and RedHat Package Manager (RPM) packages
- Perform system startup and shutdown
- Discuss and use system management tools such as System Management Interface Tool (SMIT) and IBM Systems Director console for AIX
- Manage physical and logical devices
- Discuss the purpose of the logical volume manager
- Perform logical volume and file system management
- Perform and restore system backups
- Use the AIX error log as a tool in problem determination
- Configure Transmission Control Protocol/Internet Protocol (TCP/IP) networking

# **Schulungsmethode**

# Live Online Training

16. Okt 2023 bis 20. Okt 2023 20. Nov 2023 bis 24. Nov 2023



# IBM AN15G - Power Systems for AIX III: Advanced Administration and Problem Determination

Live Online oder Präsenz

Dauer: 40h00 Nr.: 30303

Preis : 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course provides advanced AIX system administrator skills with a focus on availability and problem determination. It provides detailed knowledge of the ODM database where AIX maintains so much configuration information. It shows how to monitor for and deal with AIX problems. There is special focus on dealing with Logical Volume Manager problems, including procedures for replacing disks. Several techniques for minimizing the system maintenance window are covered. While the course includes some AIX 7.2 enhancements, most of the material is applicable to prior releases of AIX.

# Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This is an advanced course for AIX system administrators, system support, and contract support individuals with at least six months of experience in AIX.

#### Voraussetzungen

#### **Prerequisites**

You should have basic AIX System Administration skills. These skills include:

- Use of the Hardware Management Console (HMC) to activate a logical partition to run AIX and to access the AIX system console
- Install an AIX operating system from an already configured NIM server
- Implementation of AIX backup and recovery
- Manage additional software and base operating system updates
- Familiarity with management tools such as SMIT
- Understand how to manage file systems, logical volumes, and volume groups
- · Mastery of the UNIX user interface, which include use of the vi editor, command execution, input and output

redirection, and the use of utilities such as grep

These skills can be developed through experience or by formal training. The recommended training course to obtain these prerequisite skills is:

Power Systems for AIX II: AIX Implementation and Administration (AN12G) and prerequisites

If the student has AIX system administration skills, but is not familiar with the LPAR environment, those skills can be obtained by attending the following course:

Power Systems for AIX I: LPAR Configuration and Planning (AN11G)

## **Trainingsprogramm**

#### **Course Outline**

#### Day 1

- Welcome
- Unit 1: Advanced AIX administration overview
- Exercise 1: Problem diagnostic information
- Unit 2: The Object Data Manager
- Exercise 2: The Object Data Manager
- (optional) Exercise 2: Object Data Manager, Part 3
- Unit 3: Error monitoring

#### Day 2

- Exercise 3: Error monitoring
- Unit 4: Network Installation Manager basics
- Exercise 4: Basic Network Installation Manager configuration
- Unit 5: System initialization: Accessing a boot image
- Exercise 5: System initialization: Accessing a boot image

#### Day 3

- Unit 6: System initialization: rc.boot and inittab
- Exercise 6: System initialization: rc.boot and inittab
- Unit 7: LVM metadata and related problems
- Exercise 7: LVM metadata and related problems
- (optional) Exercise 7: LVM metadata and related problems, Part 6
- Unit 8: Disk management procedures, Topic 1
- Exercise 8: Disk management procedures, Part 1

#### Day 4

- Unit 8: Disk management procedures, Topic 2
- Exercise 8: Disk management procedures, Parts 2 and 3
- Unit 9: Install and cloning techniques, Topic 1
- Exercise 9: Install and cloning techniques, Part 1
- Unit 9: Install and cloning techniques, Topic 2
- Exercise 9: Install and cloning techniques, Part 2
- Unit 10: Advanced backup techniques, Topic 1
- Exercise 10: Advanced backup techniques, Part 1

- (Optional) Exercise 10: Advanced backup techniques, Part 2
- Unit 10: Advanced backup techniques, Topic 2
- Exercise 10: Advanced backup techniques, Parts 3 and 4

#### Day 5

- Unit 10: Advanced backup techniques, Topic 3
- Unit 11: Diagnostics
- Exercise 11: Diagnostics
- Unit 12: The AIX system dump facility
- Exercise 12: The AIX system dump facility
- Wrap up / Evaluations

# **Objective**

- Perform system problem determination and reporting procedures that include analyzing error logs, creating memory dumps of the system, and providing needed data to the AIX Support personnel
- Examine and manipulate Object Data Manager databases
- Identify and resolve conflicts between the Logical Volume Manager (LVM) disk structures and the Object Data Manager (ODM)
- Complete a basic configuration of Network Installation Manager to provide network boot support for either system installation or booting to maintenance mode
- Identify various types of boot and disk failures and perform the matching recovery procedures
- Implement advanced methods such as alternate disk installation, multibos, and JFS2 snapshots to use a smaller maintenance window

# Schulungsmethode

# **Live Online Training**

29. Mai 2023 bis 2. Jun 2023

7. Aug 2023 bis 11. Aug 2023

23. Okt 2023 bis 27. Okt 2023

11. Dez 2023 bis 15. Dez 2023



# IBM AN202G - Korn and Bash Shell Programming

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30058

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course will teach you how to use shell scripts and utilities for practical system administration of AIX (or other UNIX) operating systems.

# Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This course is for support staff for AIX on POWER systems

Voraussetzungen

# **Prerequisites**

You should have:

- An understanding of programming fundamentals: variables, flow control concepts such as repetition and decision.
- A working knowledge of AIX including the use of the vi editor, find and grep commands.

Students without this experience should attend AIX Basics (AN10G).

# **Trainingsprogramm**

# **Course Outline**

- Basic shell concepts
- Flow control in a shell Script
- Functions and typeset
- Shell features such as arithmetic and string handling

- Using regular expressions
- Using sed, awk and other AIX utilities

# **Objective**

After completing this course, you should be able to: Distinguish Korn and bash shell specific features Use utilities such as sed and awk to manipulate data Understand system shell scripts such as /etc/shutdown Write useful shell scripts to aid system administration

# Schulungsmethode

# **Live Online Training**

19. Jun 2023 bis 23. Jun 2023

25. Sep 2023 bis 29. Sep 2023

13. Nov 2023 bis 17. Nov 2023



# IBM AN22G - AIX Network Installation Management Concepts and Configuration

A Live Online oder Präsenz

Dauer: 16h00 Nr.: 30011

Preis: 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

# **Overview**

The primary goal of this course is to provide you with a working knowledge of the fundamental capabilities of the Network Installation Management (NIM) facility of the AIX 7.1 operating system. This course uses a combination of instructor lecture and machine exercises to provide you with practical background knowledge of the topics covered.

### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This course is appropriate for anyone with system administrative duties installing and managing an AIX operating system in a multiuser POWER (System p) environment.

#### Voraussetzungen

# **Prerequisites**

You should have:

- Basic knowledge regarding AIX systems administration
- Basic knowledge regarding the use of HMC V7 to manage POWER-based managed systems

The following course will provided the needed skills for this course:

- Power Systems for AIX I: LPAR Configuration and Planning (AN11G)
- Power Systems for AIX II: AIX Implementation and Administration (AN12G)

# **Trainingsprogramm**

# **Course Outline**

#### Day 1

- Welcome
- Unit 1: NIM overview
- Exercise 1: NIM overview
- Unit 2: Setting up the NIM master
- Exercise 2: Setting up the NIM master
- Unit 3: RTE installation
- Exercise 3: RTE installation
- Unit 4: Defining additional base install resources

#### Day 2

- Exercise 4: Defining additional base install resources
- Unit 5: NIM client backups and restores
- Exercise 5: NIM client backups and restores
- Unit 6: Managing the lpp\_source and the SPOT resources
- Exercise 6: Managing the lpp source and the SPOT resources
- Unit 7: NIM client updates
- Exercise 7: NIM client updates

### **Objective**

- Explain key NIM concepts and terminology
- Display NIM-related information
- Set up a NIM master
- Perform a base AIX (RTE) install
- Define and use several types of NIM objects
- Perform an automated install
- Create and use mksysb resource
- Maintain lpp\_source and SPOT resources
- Update NIM clients

# Schulungsmethode

# **Live Online Training**

24. Jul 2023 bis 25. Jul 2023

27. Nov 2023 bis 28. Nov 2023



# IBM AN30G - Power Systems for AIX - PowerVM I Implementing Virtualization

A Live Online oder Präsenz

Dauer: 40h00 Nr.: 30199

Preis : 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course provides an overview of the PowerVM edition's features on POWER processor-based systems. It explains the new features and benefits of virtualization including processor virtualization, Virtual I/O Server, and virtual devices, such as virtual Ethernet, virtual SCSI, and virtual Fibre Channel adapters. Basic and advanced configurations of the Virtual I/O Server and its clients are discussed including various availability options.

Expand your knowledge about PowerVM features that were introduced in *Power Systems for AIX I: LPAR Configuration* and *Planning (AN11G)*.

This course provides lectures and hands on labs in an instructor lead course environment, either in a face-to-face classroom or in a live virtual classroom environment (ILO - Instructor Led Online).

# Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This advanced course is appropriate for System Administrators, Technical Support Personnel, and Business Partners responsible for implementing LPARs on IBM Power Systems with AIX servers.

#### Voraussetzungen

#### **Prerequisites**

You must have advanced system administration experience with AIX 6 or AIX 7. This prerequisite can be met by attending one of the following courses:

Power Systems for AIX II: Implementation and Administration (AN12G)

Power Systems for AIX III: Advanced Administration and Problem Determination (AN15G)

AIX Jumpstart for UNIX Professionals (AN14G)

Alternatively, you must have equivalent AIX and LPAR skills.

General TCP/IP knowledge is strongly recommended.

You are also expected to have logical partition administration skills on Power Systems servers, which can be obtained by attending *Power Systems for AIX I: LPAR Configuration and Planning (AN11G)*.

# **Trainingsprogramm**

#### **Course Outline**

- Unit 1: Introduction to partitioning
- Exercise 1: Power Systems documentation overview
- Unit 2: HMC V8 enhancements
- Exercise 2: HMC enhanced interface
- Unit 3: Processor virtualization
- Exercise 3: Processor virtualization configuration
- Unit 4: Virtual Ethernet
- Exercise 4: Virtual Ethernet adapter configuration
- Unit 5: Virtual I/O Server and Shared Ethernet Adapter
- Exercise 5: Virtual I/O Server configuration
- Unit 6: Virtual SCSI devices
- Exercise 6: Client partition configuration
- Unit 7: Virtual network configuration with dual VIOS
- Exercise 7: SEA failover setup
- Unit 8: Virtual SCSI configurations with dual VIOS
- Exercise 8: Dual VIO server configuration with MPIO in the client partition
- Unit 9: Virtual Fibre Channel devices
- Exercise 9: Virtual Fibre Channel adapter configuration
- Unit 10: HMC Service Management
- Exercise 10: Manage service events
- Unit 11: PowerVM advanced systems maintenance
- Exercise 11: PowerVM system maintenance
- Exercise 12: (Optional) File-backed virtual SCSI devices

#### **Objective**

- Configure virtual SCSI devices that are backed by physical volumes, logical volumes, and optical media devices
- · Configure the Optical Media Repository, load a CD image, and use it to install a new AIX partition
- Configure virtual Fibre channel devices using NPIV technology
- Configure Ethernet link aggregation for load balancing and backup channel in the VIOS
- Configure Shared Ethernet adapter failover and load sharing
- Configure vNIC failover
- Perform Virtual I/O Server maintenance operations

# **Schulungsmethode**

# Live Online Training

9. Okt 2023 bis 13. Okt 2023 20. Nov 2023 bis 24. Nov 2023



# IBM AN31G - Power Systems for AIX - Virtualization II: Advanced PowerVM and Performance

Live Online oder Präsenz

Dauer: 36h00 Nr.: 30317

Preis : 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

You will learn how to implement advanced IBM PowerVM features, such as Active Memory Sharing, Active Memory Expansion, shared dedicated processors, and multiple shared processor pools.

Additionally, you will learn skills to implement, measure, analyze, and tune PowerVM virtualization features for optimal performance on IBM Power Systems servers. This course focuses on the features that relate to the performance of IBM POWER processor-based systems, AIX, and the special monitoring, configuring, and tuning needs of logical partitions (LPARs). This course does not cover application monitoring and tuning.

You will also learn AIX performance analysis and tuning tools that help an administrator take advantage of shared processors and other virtualization features of the IBM Power Systems servers.

Hands-on lab exercises reinforce each lecture and give the students practical experience.

# Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This course is for anyone responsible for the system administrative duties implementing and managing virtualization features on a System p server. The audience for this training includes the following:

- AIX technical support individuals
- System administrators
- · Systems engineers
- System architects

#### Voraussetzungen

# **Prerequisites**

The LPAR prerequisite skills can be met by attending one of the following classes or you can have equivalent LPAR skills:

• Power Systems for AIX - Virtualization I: Implementing Virtualization (AN30G)

### **Trainingsprogramm**

# **Course Outline**

#### Day 1

- Welcome
- Unit 1: PowerVM features review
- Exercise 1: Introduction to the lab environment
- Unit 2: Shared processors and virtual processor tuning Exercise 2: Shared processors and virtual processor tuning

#### Day 2

- Unit 3: Multiple shared processor pools and donating dedicated processors
- Exercise 3: Multiple shared processor pools and donating dedicated processors
- Unit 4: Active Memory Sharing Exercise 4: Active Memory Sharing

#### Day 3

- Exercise 4: Active Memory Sharing (continued)
- Unit 5: Suspend and Resume Exercise 5: Suspend and Resume Unit 6: Active Memory Expansion Exercise 6: Active Memory Expansion

#### Day 4

- Unit 7: Virtual storage performance
- Exercise 7: Virtual storage performance Unit 8: Virtual network performance

#### Day 5

- Exercise 8: Virtual network performance
- Unit 9: Virtualization monitoring and performance management tools Exercise 9: Using the Virtual I/O Server Performance Analysis Reporting Tool
- Wrap up/Evaluations

#### **Objective**

- Describe the effect of the IBM PowerVM virtualization features on performance and monitoring, such as:
  - Simultaneous multithreading (SMT), shared processors, virtual processors, multiple shared processor pools (MSPP), shared dedicated capacity, Active Memory Sharing (AMS), Active Memory Expansion (AME)
- Interpret the outputs of AIX performance monitoring and tuning tools used to view the impact of features such as SMT, shared processors, additional shared processor pool activations, and device virtualization
- Configure and monitor Active Memory Expansion
- Configure the Suspend and Resume and Active Memory Sharing features
- Implement the deduplication feature of Active Memory Sharing

# Schulungsmethode

# **Live Online Training**

24. Apr 2023 bis 28. Apr 2023

3. Jul 2023 bis 7. Jul 2023

4. Sep 2023 bis 8. Sep 2023

27. Nov 2023 bis 1. Dez 2023



# **IBM AN33G - Implementing PowerVM Live Partition Mobility**

🙎 Live Online oder Präsenz

Dauer: 24h00 Nr.: 30385

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course describes the concepts and configuration details when implementing PowerVM Live Partition Mobility on POWER6 and POWER7 processor-based servers. Students will learn the requirements of Live Partition Mobility and will configure HMCs, Virtual I/O Servers, and partitions in preparation for performing active and inactive migrations. Live hands-on exercises will allow students to configure a lab environment and perform Live Partition Mobility operations.

This course provides lectures and hands on labs in an instructor lead course environment, either in a face-to-face classroom or in a live virtual classroom environment (ILO - Instructor Led Online).

# Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

The audiences for this advanced training include AIX/Linux technical support individuals, system administrators, system architects and engineers, and anyone who needs a technical operational understanding of PowerVM Live Partition Mobility.

#### Voraussetzungen

#### **Prerequisites**

You should:

- Have completed Power Systems for AIX Virtualization I: Implementing Virtualization (AN30G) or Power Systems for AIX - Virtualization I: Implementing Virtualization - ILO (AX30) or have equivalent LPAR and Virtual I/O Server skills
- Be proficient with HMC Version 7 or Version 8, Virtual I/O Server operations, and AIX LPAR system administration.

# Trainingsprogramm

# **Course Outline**

- Live Partition Mobility (LPM) overview
- Virtual I/O Server and mobile configuration
- Partition migration operations
- Advanced LPM scenarios

# **Objective**

- Describe key components of Live Partition Mobility
- Describe configuration settings necessary for the HMCs, the source and target Virtual I/O servers, and the mobile LPAR
- Perform and monitor PowerVM Live Partition Mobility operations
- Describe differences between active and inactive Live Partition Mobility configuration and operations
- Describe advanced migration configuration and tuning options when using the migrlpar command

# **Schulungsmethode**

# Live Online Training

12. Jun 2023 bis 14. Jun 2023

23. Okt 2023 bis 25. Okt 2023

4. Dez 2023 bis 6. Dez 2023



# IBM AN51G - Power Systems for AIX IV: Performance Management Live Online oder Präsenz

Dauer: 40h00 Nr.: 30080

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket : Auf Anfrage

#### **Overview**

Develop the skills to measure, analyze, and tune common performance issues on IBM Power Systems running AIX.

Learn about performance management concepts and techniques and how to use the basic AIX tools to monitor, analyze, and tune an AIX system. The course covers how virtualization technologies such as the PowerVM environment and workload partitions affect AIX performance management. Monitoring and analyzing tools discussed in this course include vmstat, iostat, sar, tprof, symon, netstat, lymstat, and topas. Tuning tools include schedo, ymo, ioo, no, and nfso.

The course also covers how to use Performance Problem Reporting (PerfPMR) to capture a variety of performance data for later analysis.

Each lecture is reinforced with extensive hands-on lab exercises which provide practical experience.

The materials include AIX 7.1 enhancements and the exercises are executed on a POWER8 lab environment.

# Wer sollte teilnehmen:

#### **Zielgruppe**

# **Audience**

This advanced course is for:

- AIX technical support personnel
- Performance benchmarking personnel
- AIX system administrators

#### Voraussetzungen

#### **Prerequisites**

You are expected to have basic AIX system administration skills. These skills can be obtained by attending the following courses:

- AIX Jumpstart for UNIX professionals (AN14G) or
- Power Systems for AIX II: Implementation and Administration (AN12G)

It is very helpful to have a strong background in TCP/IP networking to support the network performance portion of the course. These skills can be built or reinforced by attending:

• TCP/IP for AIX Administrators (AN21G)

It is also very helpful to have a strong background in PowerVM (particularly micro partitioning and the role of the Virtual I/O Server). These skills can be built or reinforced by attending:

• Power Systems for AIX - Virtualization I: Implementing Virtualization (AN30G)

# **Trainingsprogramm**

# **Course Outline**

#### Day 1

- Unit 1 Performance analysis and tuning overview
- Exercise 1 Working with tunable files Unit 2 Data collection
- Exercise 2 Data collection
- Unit 3 Monitoring, analyzing, and tuning CPU usage
- Exercise 3 Monitoring, analyzing, and tuning CPU usage (parts 1 and 2)

#### Day 2

- Exercise 3 Monitoring, analyzing, and tuning CPU usage (parts 3, 4 and 5)
- Unit 4 Virtual memory performance monitoring and tuning Exercise 4 Virtual memory performance monitoring and tuning Student's choice optional exercise from exercise 3 or exercise 4

#### Day 3

- Unit 5 Physical and logical volume performance
- Exercise 5 Physical and logical volume performance
- Unit 6 File system performance monitoring and tuning (topic 1)
- Exercise 6 File system performance monitoring and tuning (parts 1, 2, and 3)

#### Day 4

- Unit 6 File system performance monitoring and tuning (topic 2)
- Exercise 6 File system performance monitoring and tuning (part 4) Unit 7 Network performance
- Exercise 7 Network performance
- Student's choice optional exercise from exercises 3, 4, or 6

#### Day 5

- Unit 8 NFS performance
- Exercise 8 NFS performance tuning
- Unit 9 Performance management methodology Exercise 9 Summary exercise
- Student's choice optional exercises from exercises 3, 4, 6, or 7

#### Objective

Define performance terminology

- Describe the methodology for tuning a system
- Identify the set of basic AIX tools to monitor, analyze, and tune a system
- Use AIX tools to determine common bottlenecks in the central processing unit (CPU), virtual memory manager (VMM), logical volume manager (LVM), internal disk input/output (I/O), and network subsystems
- Use AIX tools to demonstrate techniques to tune the subsystems

# Schulungsmethode

# **Live Online Training**

31. Jul 2023 bis 4. Aug 2023

4. Dez 2023 bis 8. Dez 2023



# IBM AN52G - Advanced Tools for AIX Performance Analysis

🙎 Live Online oder Präsenz

Dauer: 32h00 Nr.: 30244

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Develop the skills to use kernel traces, trace based utilities, and symon to measure and analyze CPU, memory, and I/O performance issues on IBM systems running AIX. Reinforce each lecture during extensive hands-on lab exercises and get practical experience applicable to their performance management requirements.

# Wer sollte teilnehmen:

#### Zielgruppe

#### **Audience**

The audience for this training includes AIX technical support personnel, performance benchmark personnel, and AIX system administrators.

#### Voraussetzungen

# **Prerequisites**

You are expected to have extensive AIX skills. These skills can be obtained by attending the following courses:

AIX Power Systems for AIX IV: Performance Management (AN510) or have the equivalent extensive AIX skills

#### **Trainingsprogramm**

# **Course Outline**

Day 1

- Welcome
- Unit 1: AIX trace facilities
- Exercise 1: AIX trace facilities

- Unit 2: Advanced memory topics I
- Exercise 1: AIX trace facilities (Part 3)
- Exercise 2: Advanced memory topics I

#### Day 2

- Unit 3: Advanced memory topics II
- Exercise 3: Advanced memory tropics II
- Unit 4: Advanced CPU topics I
- Exercise 4: Advanced CPU topics I
- (Optional) Exercise 4: Advanced CPU topics I (Part 2)

#### Day 3

- Unit 5: Advanced CPU topics II
- Exercise 5: Advanced CPU topics II
- Unit 6: Advanced I/O topics I
- Exercise 6: Advanced I/O topics I (Part 1)
- (Optional) Exercise 5: Advanced CPU topics II
- (Parts 2 and 3)

#### Day 4

- Exercise 6: Advanced I/O topics I (Part 2)
- Unit 7: Advanced I/O topics II
- Exercise 7: Advanced I/O topics II
- (Optional) Exercise 7: Advanced I/O topics II (Part 3)

# Objective

- Use the trace facility to collect data and create a trace report
- Use the kernel trace facilities to analyze CPU performance issues
- Describe causes and impacts of high context switching rates
- Identify what causes a thread to be blocked and later woken up
- Explain the relationship between the output of symon -G, symon -P, and symon -S
- Calculate the amount of memory in use on the system
- Explain the relationship between symon, ymstat, and ipcs output
- Categorize the memory in use on the system by segment type
- Identify which processes are using the most memory or paging space
- Describe the characteristics of asynchronous I/O, synchronous I/O, direct I/O, and concurrent I/O
- Identify if the expected type of I/O is being executed
- Tune asynchronous I/O

#### **Schulungsmethode**

# **Live Online Training**

13. Jun 2023 bis 16. Jun 2023

31. Okt 2023 bis 3. Nov 2023



# IBM AN61G - PowerHA SystemMirror 7 Planning, Implementation, Customization and Basic Administration

Live Online oder Präsenz

Dauer: 40h00 Nr.: 30115

Preis : 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course is designed to prepare students to install and configure a highly available cluster using PowerHA SystemMirror.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

## **Audience**

The audience for this advanced course is students who are experienced AIX system administrators with TCP/IP networking and AIX Logical Volume Manager (LVM) experience who are responsible for the planning and installation of a PowerHA SystemMirror 7.1 and later cluster on an IBM Power Systems server running AIX V6.1 or later. The lab exercises are conducted on an AIX 7.1 TL2 level system.

#### Voraussetzungen

### **Prerequisites**

You should be AIX system administrator and have TCP/IP, LVM storage, and disk hardware implementation skills. These skills are addressed in the following courses or can be obtained through equivalent education and experience:

• Power Systems for AIX II: AIX Implementation and Administration (AN12G)

# **Trainingsprogramm**

#### **Course Outline**

Day 1

- Welcome and course introduction
- Unit 1: Introduction to PowerHA SystemMirror
- Unit 2: Planning and configuring network and storage for PowerHA SystemMirror
- Exercise 1: Lab setup, cluster planning, and exploring fallover
- Exercise 2: Preparing the AIX environment for PowerHA SystemMirror

#### Day 2

- Unit 3: Configuring applications for PowerHA SystemMirror
- Unit 4: Configuring a PowerHA SystemMirror cluster
- Exercise 3: Preparing an application for integration with SystemMirror
- Exercise 4: Initial cluster configuration

#### Day 3

- Unit 5: Cluster validation and testing
- Unit 6: Basic PowerHA SystemMirror administration
- Exercise 5: Cluster validation and testing
- Exercise 6: Extending the configuration

#### Day 4

- Unit 7: Events
- Unit 8: Basic troubleshooting
- Exercise 7: Events
- Exercise 8: PowerHA SystemMirror problem determination

#### Day 5

- Unit 9: PowerHA SystemMirror installation
- Exercise 9: Install and maintain PowerHA SystemMirror
- Open lab

#### **Objective**

- Explain what high availability is
- Outline the capabilities of PowerHA SystemMirror
- Design and plan a highly available PowerHA cluster
- Install and configure PowerHA SystemMirror in the following modes of operation:
- Single resource group on a primary node with standby node (active/passive)
- Two resource groups in a mutual takeover configuration (active/active)
- Configure resource group startup, fallover, and fallback policies
- Perform basic system administration tasks for PowerHA
- Perform basic customization for PowerHA
- Perform basic problem determination and recovery

This course is the first in the PowerHA 7 curriculum. The following courses can be taken after this course is completed:

• PowerHA 7 Advanced Configurations (AN62G)

# **Schulungsmethode**

# **Live Online Training**

26. Jun 2023 bis 30. Jun 2023

26. Jun 2023 bis 30. Jun 2023

13. Nov 2023 bis 17. Nov 2023



# IBM AN62G - PowerHA SystemMirror 7 Advanced Configurations

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30361

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket : Auf Anfrage

#### **Overview**

This course is designed to teach experienced PowerHA SystemMirror for AIX professionals the latest features in PowerHA SystemMirror. It covers how to:

- Effectively administer and monitor an IBM PowerHA SystemMirror for AIX cluster
- Implement PowerHA SystemMirror for AIX's more complex options

# Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This course is designed for experienced AIX system administrators and support personnel who are responsible for the administration, maintenance, and implementation of PowerHA SystemMirror clusters on IBM Power Systems running AIX. This audience includes:

- Students who want to learn to work with the PowerHA SystemMirror 7.1 for AIX
- · Students who want to learn about how to implement PowerHA SystemMirror for AIX in complex configurations
- Technical leaders responsible for designing PowerHA SystemMirror for AIX clustering solutions

#### Voraussetzungen

# **Prerequisites**

You should have experience with installing and performing standard PowerHA SystemMirror for AIX configuration functions, which can be obtained through the following course (or equivalent experience):

• PowerHA SystemMirror for AIX System Administration I: Planning and Implementation (AN61G)

You should also be familiar with:

• The AIX operating system

- The IBM server hardware that they are using
- The principles of good system management
- TCP/IP communications concepts and tools, as covered in (AN12G)or(AN14G) briefly
- Logical Volume Manager (LVM) concepts and configuration, as covered in (AN12G)or(AN14G)
- · Good Korn Shell script programming

### **Trainingsprogramm**

# **Course Outline**

#### Day 1

- Welcome
- Unit 1: PowerHA review with the advanced topology and CSPOC
- Exercise 1: Lab setup, cluster review, topology, and CSPOC administration

#### Day 2

- Unit 2: Adding applications
- Exercise 2: Adding additional applications

#### Day 3

- Unit 3: Advanced administration: Resources and resource groups
- Exercise 3: Application monitors and resource group dependencies

#### Day 4

- Unit 4: Determining cluster status using the command line interface
- Exercise 4: Determining cluster status using command line Unit 5: Advanced administration: Event configuration Exercise 5: PowerHA for AIX event configuration

#### Day 5

- Unit 6: Advanced administration: DLPAR and WPAR implementation
- Exercise 6: Implementing DLPAR and WPAR
- Unit 7: Using the PowerHA SystemMirror plug-in for IBM Systems Director (optional)
- Open lab time

#### Objective

- Review fundamental PowerHA SystemMirror for AIX concepts and components
- Create four node clusters with two independent resource groups
- Create and test robust application start and stop scripts
- Create and test custom application monitors
- Create resource group dependencies
- Customize event notifications
- Integrate WPAR and DLPAR with applications under PowerHA control
- Integrate applications into PowerHA using Smart Assists
- · Determine the status of the cluster and cluster components using PowerHA/SNMP commands
- Manage the cluster using the IBM Systems Director plug-in

# Schulungsmethode

## **Live Online Training**

3. Jul 2023 bis 7. Jul 2023

20. Nov 2023 bis 24. Nov 2023



## IBM AS06G - RPG IV Programming Fundamentals Workshop for IBM i R Live Online oder Präsenz

Dauer: 32h00 Nr.: 30089

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Course RPG IV Programming Fundamentals Workshop for IBM i (AS06G) teaches the basics of the IBM i RPG IV programming language. It is the first of two courses that should be attended in sequence.

This course is a comprehensive exposure to the basic features and functions of RPG IV for Version 7. It does not introduce either information processing or programming in general. Students who are new to programming should attend other courses that are offered by local technical colleges or self-study methods.

This course is designed to enable a trained programmer to develop and maintain simple RPG IV programs written using the latest features and techniques available in the Version 7 compiler.

### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This course is the first in a series of two courses designed for programmers who are new to RPG IV. Basic programming experience is required. The student should have attended at least an introductory course to programming such as one of those available at technical colleges. The student is not taught the concepts of programming.

Experienced programmers who are new to the Power System with IBM i should also attend this course. Examples of other programming languages are BASIC, COBOL, or RPG II.

This course focuses entirely on the features of the RPG IV Version 7 compiler and the techniques that this compiler provides. Features of V7 are discussed.

Previous techniques and the maintenance of programs that are written using legacy techniques, such as fixed format calculations, are not covered in the classroom. Some additional material and the bibliography will assist the new RPG IV programmer in the maintenance of legacy applications.

## **Prerequisites**

You should be able to:

- Use a Windows-based PC
- Run PC applications using menus, icons, toolbars, and so forth
- Write a simple program in another high-level language (for example, CL, COBOL, BASIC, or RPG II)
- Use basic IBM i tools, including:
  - o CL commands
  - Online Help
  - WRKSPLF and related commands to manage output
  - o WRKJOB, DSPMSG, DSPJOB commands and so forth to perform basic problem determination
- Use and display IBM i print queues
- Use the RSE/LPEX Editor to create and maintain DDS
- · Create and maintain physical and logical files

You must have attended these courses:

• Introduction to IBM i for New Users (OE98G)

### **Trainingsprogramm**

### **Course Outline**

- RPG IV introduction
- Coding specifications for RPG IV
- Data representation and definition
- Manipulating data in calculations
- Using printer and display files in an RPG IV program
- Structured programming, error handling, subprocedures, and subroutines
- Using arrays, data structures, and data areas
- Accessing the DB2 database using RPG IV
- What's next?

### **Objective**

- Write RPG IV version 7.3 programs to produce reports
- Write simple RPG IV version 7.3 inquiry programs that interact with displays
- Review compilation listing, find and correct compilation errors
- Maintain existing applications written in the RPG IV Version 7.3 language
- Use many popular RPG IV built-in functions

### **Schulungsmethode**

## **Live Online Training**

18. Jul 2023 bis 21. Jul 2023

17. Okt 2023 bis 20. Okt 2023

5. Dez 2023 bis 8. Dez 2023



## IBM AS10G - RPG IV Programming Advanced Workshop for IBM i

🙎 Live Online oder Präsenz

Dauer: 32h00 Nr.: 30039

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course teaches additional skills and techniques to programmers who can already write comprehensive RPG IV programs.

This class offers a comprehensive discussion of some of the advanced features and functions of RPG IV. This class is designed to enable an experienced RPG IV programmer to develop and maintain RPG IV programs of an advanced level using the latest features and techniques available in the IBM i RPG IV compiler.

### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This course is the second in a series of two classes designed for programmers who want to learn to code using the IBM i ILE RPG IV language. Previous programming experience using RPG IV is mandatory before enrolling in this course. The student should have attended RPG IV Programming Fundamentals Workshop for IBM i (AS06G).

Previous techniques and the maintenance of programs written using legacytechniques are not covered in the classroom.

#### Voraussetzungen

### **Prerequisites**

You must have attended these courses (or have equivalent experience):

- Introduction to IBM i for New Users (OE98G)
- IBM i Technical Introduction (OL4AG)
- RPG IV Programming Fundamentals Workshop for IBM i (AS06G)

You should be able to:

- Use a Windows-based PC
- Run PC applications using menus, icons, tool bars, and so forth

#### **Trainingsprogramm**

## **Course Outline**

#### Day 1

- Unit 1 Welcome and administration
- Unit 2 Using subfile displays Exercise 1 Inquiry subfile with search
- Exercise 2 Modularize vendor subfile search Exercise 3 Page + 1 and PageDown Exercise 4 Add PageUp
- Exercise 5 Add SFLPAG = SFLSIZ Exercise 6 Add maintenance

#### Day 2

- Unit 2 Using subfile displays (continued)
- Exercise 6 Add maintenance (continued) Unit 3 Using the debugger
- Exercise 7 Debugging an RPB IV program
- Unit 4 ILE error handling and condition handlers Exercise 8 Enhancing the condition handler

#### Day 3

- Unit 5 Basic API programming
- Exercise 9 Using system APIs I Exercise 10 Using system APIs II Unit 6 Using RPG Compiler directives
- Exercise 11 Using conditional compiler directives
- Unit 7 Using pointers, user spaces, and dynamic memory Exercise 12 Using list APIs

#### Day 4

- Unit 8 Using C functions
- Exercise 13 Using C IFS functions Exercise 14 Using C library functions Unit 9 Using XML in RPG IV
- Exercise 15 Enhancing the xml-into program

### **Objective**

- Use address pointers and user spaces in RPG IV programs
- Write and maintain display programs using subfiles
- Develop ILE modular objects and package them in service programs
- Use the IBM i debugger with RPG IV programs
- Explain the behavior of error handling and percolation in ILE
- Code an ILE error handling program
- Call application program interfaces (APIs) from RPG IV program
- Use C functions in RPG IV programs
- Parse XML in RPG IV programs

### Schulungsmethode

## **Live Online Training**

20. Jun 2023 bis 23. Jun 2023

5. Dez 2023 bis 8. Dez 2023



## IBM AS24G - System Operator for IBM i

🙎 Live Online oder Präsenz

Dauer : 32h00 Nr. : 30111

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This introductory course enables a new system operator to develop basic to intermediate level skills needed for day-to-day operations of the Power System with IBM i. Focus is given to using the GUI (IBM i Access Client Solutions and IBM Navigator for i) as well as 5250 emulation sessions to perform tasks including job control, monitoring, sending messages, managing systems devices, and more. Hands-on exercises reinforce the lecture topics and prepare the student to successfully operate a Power System with IBM i.

### Wer sollte teilnehmen:

### **Zielgruppe**

#### **Audience**

This course is intended for the person who has responsibility for daily system operations.

It is not intended for technical audiences who are seeking an in-depth look at how the Power System with IBM i works. This audience should instead attend the IBM i Technical Introduction (OL4AG).

#### Voraussetzungen

### **Prerequisites**

There are no prerequisites for this course.

### **Trainingsprogramm**

## **Course Outline**

Day 1

Unit 1: Power Systems and IBM i concepts and overview Unit 2: Reference material and support Unit 3: Overview of

IBM i Access Client Solutions Exercise 1: Using the keyboard and system displays Unit 4: Overview of 5250 emulation and help Exercise 2: Overview of IBM i Access Client Solutions Unit 5: Overview of IBM Navigator for i Exercise 3: Overview of IBM Navigator for i Unit 6: Messaging concepts Unit 7: Messaging with 5250 emulation Exercise 4: Messages with 5250 emulation Unit 8: Messaging with IBM Navigator for i Exercise 5: Messaging with IBM Navigator for i Unit 9: CL command concepts Unit 10: CL commands with 5250 emulation Unit 11: Concepts: Object, library, and the IFS

#### Day 2

Unit 12: Object management with 5250 emulationExercise 6: Object management with 5250 emulationUnit 13: Object management with IBM Navigator for iExercise 7: Object management with IBM Navigator for iUnit 14: Introduction to work managementUnit 15: Work management with 5250 emulationExercise 8: Work management with 5250 emulationExercise 9: Work management with IBM Navigator for i (Optional)Unit 16: Job control with 5250 emulationExercise 10: Job control with 5250 emulationUnit 17: Job control with IBM Navigator for iExercise 11: Job control with IBM Navigator for i (Optional)Unit 18: Print conceptsUnit 19: Print control with 5250 emulationExercise 12: Print control with 5250 emulationUnit 20: IBM i Access Client Solutions printer outputExercise 13: Print with IBM i Access Client SolutionsUnit 21: Print control with IBM Navigator for i (Optional)

#### Day 3

Exercise 15 Creating your own subsystem descriptionExercise 16 Special work management functionsUnit 22: Starting and stopping the systemExercise 17: System values with 5250 emulationExercise 18: System values with IBM Navigator for i (Optional)Unit 23: System security conceptsUnit 24: System security with 5250 emulationExercise 19: System security with 5250 emulationUnit 25: System security with IBM Navigator for iExercise 20: System security with IBM Navigator for i (Optional)Unit 26: System configuration overviewUnit 27: Configuration with 5250 emulationExercise 21: Managing your system configurationUnit 28: Configuration with IBM Navigator for iUnit 29: Control language programmingExercise 22: Write a basic CL program

#### Day 4

Unit 30: IBM DB2 for i introductionUnit 31: Save conceptsUnit 32: Save with 5250 emulationExercise 23: Save with 5250 emulationUnit 33: Save with IBM Navigator for iUnit 34: Restore concepts and overviewExercise 24: Restore with 5250 emulationUnit 35: Problem determination with 5250 emulationExercise 25: Problem determinationUnit 36: Overview of the PTF processUnit 37: PTFs with 5250 emulationUnit 38: Storage managementUnit 39: Introduction to system tuningUnit 40: Class summary

### **Objective**

- Use the online help and references
- Send, display, and reply to messages
- Monitor and control jobs, devices, and job and output queues
- Start and stop the system
- Create and change user profiles
- Use authorization lists and group profiles
- Manage system configuration --> this could be the replacement for Manage system devices, user display stations, and printers
- Save and restore objects, libraries, and the system
- Monitor job and history logs
- Diagnose a system problem
- Order, receive, and apply PTFs
- Perform all of these functions using a 5250 emulation session as well as IBM i Access Client Solutions and IBM

## Schulungsmethode

## **Live Online Training**

13. Jun 2023 bis 16. Jun 2023

25. Sep 2023 bis 28. Sep 2023

31. Okt 2023 bis 3. Nov 2023



## IBM AS27G - Advanced System Operator Workshop for IBM i

Live Online oder Präsenz

Dauer : 24h00 Nr. : 30272

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course is designed to enhance the skills of an IBM i System Operator. This course explains the concept of how LPAR works and discusses the functions provided by the HMC. We will discuss the IBM i Access Family of products in general and Access Client Solutions, specifically. We will discuss the different types of security that you can implement in order to control who has access to your data and what they can do with that data if they are allowed to access. We will discuss security control via system values, user and group profiles, authorization lists, and adopted authority. This course will help you develop additional skills in the areas of work management and how to create a basic CL program. In the area of CL programming, we discuss concepts of programming, then how to create a basic CL program using the traditional application development tools PDM and SEU. Then, you will learn how to use the GUI tools in RDP (RSE and LPEX). You will also learn the steps to create a menu using SDA. You will learn some tips that you can use to help improve your IBM i operations. We will also discuss how you can use Management Central as a tool to manage a single system or a network of TCP/IP connected Power Systems with IBM i.

### Wer sollte teilnehmen:

#### Zielgruppe

#### **Audience**

This advanced course is designed for those individuals who are responsible for operating and managing the operation of an IBM i system.

#### Voraussetzungen

### **Prerequisites**

You should be able to:

- Perform basic system operations such as starting and stopping the system; sending and receiving messages; saving and restoring objects, libraries, and user profiles; and executing CL commands
- Describe an interactive job and a batch job
- Use help facilities

- Describe basic security concepts
- Monitor devices
- Initiate problem determination

### **Trainingsprogramm**

### **Course Outline**

- LPAR concepts and overview
- Console options and HMC overview
- IASP concepts and overview
- Security concepts and overview
- System values
- User security (user and group profiles)
- Resource security
- Authorization lists and adopted authority
- Management Central overview
- Commands and tasks using Management Central
- Inventory using Management Central
- System values using Management Central
- Other Management Central functions
- Work management: Concepts and overview
- Work management: Subsystem concepts and overview
- Work management: Job processing concepts and interactive jobs
- Work management: Job processing concepts of other job types
- Work management: Submitting and tracking of batch jobs
- Programming concepts
- CL programming concepts
- Using PDM and SEU to create a CL program
- · Starting and setting up RSE
- Creating a CL program using RSE and LPEX Editor
- Creating a menu using SDA
- Tips for improved operation

### **Objective**

- Explain the concept of how LPAR works
- Explain the functions served by the HMC
- Explain how user versus resource security are implemented
- Explain the difference between group profiles and authorization lists
- Describe how adopted authority works
- Describe how work is managed on the system and the concepts of the performance tuning process on the system
- Explain how Management Central can be used to manage a single system or a network of System i servers
- Perform the steps to create a basic CL program using both the traditional (PDM and SEU) and the newer GUI (RSE and LPEX) application development tools
- · Perform the steps to create a menu using SDA
- Provide some tips on how you can improve your operations

### Schulungsmethode

## **Live Online Training**

20. Jun 2023 bis 22. Jun 2023

21. Aug 2023 bis 23. Aug 2023

7. Nov 2023 bis 9. Nov 2023



# IBM AS28G - BRMS for IBM i, including Cloud Storage Solutions for i R Live Online oder Präsenz

Dauer: 40h00 Nr.: 30388

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course covers the features and functions supported by Backup Recovery and Media Services (BRMS). BRMS is an integrated and comprehensive tool for managing backup, recovery, archive, and retrieval operations for a single Power system with IBM i or multiple systems with IBM i at a site or across a BRMS Network. The lectures describe how to perform the supported functions when using a 5250 emulation session, when using System i Navigator, and when using IBM Navigator for i. Students will then have the opportunity to practice in lab exercises what they have learned in lecture.

### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This is an intermediate course for Power System with IBM i administrators, IBM Business Partners, and anyone else who would like practical knowledge of the features and functions supported by BRMS.

#### Voraussetzungen

### **Prerequisites**

You should have a working understanding of the capabilities and operations in the area of save and restore for IBM i.

### **Trainingsprogramm**

### **Course Outline**

Day 1

- Welcome and eLab overview
- Unit 1: Installing BRMS
- Unit 2: BRMS policies overview
- Exercise 1: Using 5250 emulation
- Exercise 2: Using System i Navigator
- Exercise 3: Using IBM Navigator for i
- Unit 3: Media devices and encryption using software and hardware
- Unit 4: Overview and implementation of virtual tape, DVD, and optical device support
- Exercise 4: Media devices and virtual tape
- Unit 5: Creating a simple backup control group

#### Day 2

- Review
- Unit 6: BRMS log
- Exercise 5: Creating a basic backup control group using 5250 green screen
- Exercise 6: Creating a basic backup control group using System i Navigator
- Exercise 7: Creating a basic backup control group using IBM Navigator for i
- Unit 7: Saving IFS data
- Unit 8: Working with backup lists
- Exercise 8: Creating and using backup lists and saving to a save file
- Exercise 9: Creating and using backup lists and saving to a save file using System i Navigator
- Exercise 10: Creating and using backup lists and saving to a save file using IBM Navigator for i
- Unit 9: Parallel save, user exits, and save-while-active
- Unit 10: Performing a backup and full system backup
- Unit 11: Other backup topics
- Exercise 11: Creating a backup control group
- Exercise 12: Creating a backup control group using System i Navigator
- Exercise 13: Creating a backup control group using IBM Navigator for i

#### Day 3

- Unit 12: Storage locations
- Exercise 14: Creating a storage location
- Unit 13: Containers
- Unit 14: Move management
- Exercise 15: Move policies
- Unit 15: Media class
- Exercise 16: Creating a media class
- Unit 16: Media policies
- Exercise 17: Creating a media policy
- Unit 17: Media topics
- Exercise 18: Running a backup using 5250 emulation
- Exercise 19: Running a backup using System i Navigator

#### Day 4

- Exercise 20: Running a backup using IBM Navigator for i
- Review Exercises 18 through 20
- Unit 18: BRMS networking
- Unit 19: Scheduling BRMS jobs
- Unit 20: Daily maintenance
- Unit 21: BRMS reports
- Unit 22: Recovery

- Exercise 21: BRMS recovery capabilities
- Unit 23: Tape duplication and label print
- Exercise 22: Tape duplication
- Unit 24: Functional usage

#### Day 5

- Unit 25: Archive
- Unit 26: Retrieval
- Exercise 23: Archive/retrieve using 5250 emulation
- Unit 27: TSM Client and BRMS on IBM i
- Unit 28: BRMS Enterprise
- Unit 29: Summary

## **Objective**

- Describe the major features and functions of BRMS
- List the steps to install BRMS on a single system or in a BRMS Network environment
- Implement a previously defined backup and recovery strategy using BRMS
- Implement a previously defined archival and retrieval plan, including dynamic retrieval, using BRMS
- Explain how to utilize a tape drive, tape library system, virtual tape, and optical drive with BRMS
- Implement and use BRMS using the green screen, System i Navigator, and IBM Navigator for i

## Schulungsmethode

## **Live Online Training**

24. Apr 2023 bis 27. Apr 2023 17. Jul 2023 bis 20. Jul 2023 11. Sep 2023 bis 14. Sep 2023

23. Okt 2023 bis 26. Okt 2023 4. Dez 2023 bis 7. Dez 2023



## IBM AS40G - Using Open Source tools on IBM i

🙎 Live Online oder Präsenz

Dauer : 24h00 Nr. : 30425

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course is designed to teach the installation and administration of open source packages on IBM i as well as teach how to use some of the open source packages that can be downloaded. Class activities include showing how to download and manage open source packages using Access Client Solutions, and how to use python, node.js, and PHP to access data in different ways on the IBM i.

### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

- IBM i System Administrators
- IBM i Programmers
- API/Cloud enablers

#### Voraussetzungen

### **Prerequisites**

- · Knowledge of one of python, node.js or PHP
- Understanding of IBM iconcepts

### **Trainingsprogramm**

### **Course Outline**

- Unit 1: Introduction to open source packages on IBM I
- Unit 2: IBM I and the PASE environment
- Exercise 2: Working in the PASE environment
- Unit 3: Install and manage open source packages

- Exercise 3: Using the open source package manager
- Unit 4: XMLserviceand iToolkit
- Exercise 4: Access programs and procedures using python, node.js or PHP
- Unit 5: Using SQL to access IBM i
- Exercise 5: Access data using python, node.js or PHP
- Unit 6: Message queues
- Exercise 6: Using data queues with python, node.js or PHP
- Unit 7: REST on IBM i
- Exercise 7: Using REST with python, node.js or PHP
- Unit 8: Apache Camel on IBM i
- Exercise 8: Using Apache Camel

### **Objective**

- Understand how to install and manage open source packages on IBM i
- Learn what open source packages are available on IBM i
- Comprehend how to use open source languages to interface with procedural programs and procedures on IBM i
- Comprehend how to use open source languages and SQL to access data on the IBM i

## Schulungsmethode

## **Live Online Training**

19. Jun 2023 bis 21. Jun 2023

18. Sep 2023 bis 20. Sep 2023

27. Nov 2023 bis 29. Nov 2023



### IBM BE87G - Effective RACF Administration

Live Online oder Präsenz

Dauer : 36h00 Nr. : 30340

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course prepares you to be a more effective security administrator as you gain experience and confidence in using the RACF component of the z/OS Security Server. To reinforce lectures, the course offers hands-on exercises where you use the RACF component of the z/OS Security Server to define users, set up group structures, define general resources, protect z/OS data sets, and use several RACF utilities.

### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This intermediate course is for people who are new to the RACF component of the z/OS Security Server, and responsible for security administration. This includes people who are planning to implement RACF for the first time, and people who are security administrators in installations where RACF is already implemented. Those inexperienced z/OS users might find the course *Basics of z/OS RACF Administration (ES19)* more appropriate.

Anyone planning to implement the advanced features of RACF should consider attending *Implementing RACF* Security for CICS (ES84), and Exploiting the Advanced Features of RACF (ES88)

#### Voraussetzungen

## **Prerequisites**

You should be familiar with the facilities of the system, logging on to TSO and using ISPF. A knowledge of resources like data sets, DASD volumes, and programs is required to get the most benefit from the course. This knowledge might be obtained by attending *Fundamental System Skills in z/OS (ES10)*, or consider taking *Basics of z/OS RACF Administration (ES19)* instead of this course. ES19 spends the first day covering these prerequisites and provides a more basic understanding of RACF than *Effective RACF Administration (BE87)*.

You might also find it beneficial to attend *z/OS Security Server RACF*, *Implementation and Customization (SZ81)* to learn the implementation and customization of the z/OS security server RACF.

### **Trainingsprogramm**

## **Course Outline**

#### Day 1

- Welcome
- Unit 1 Security and RACF overview
- Unit 2 Administering groups and users
- Exercise 1 Log on to the lab system
- Exercise 2 Defining a RACF group structure
- Exercise 3 User administration

#### Day 2

- Exercise review
- Unit 2 Administering groups and users (continued)
- Exercise 4 Delegating security administration
- Unit 3 Protecting z/OS data sets
- Exercise 5 Protecting z/OS data sets: Part 1

#### Day 3

- Exercise 5 Protecting z/OS data sets: Part 1 (continued)
- Exercise 6 Protecting z/OS data sets: Part 2 Exercise review
- Unit 4 Introduction to user administration and delegation and general resources
- Exercise 7 Password reset granularity
- Unit 5 RACF database, tables, and performance options

#### Day 4

- Unit 6 RACF utilities and exits
- Unit 7 RACF options
- Unit 8 Auditing the RACF environment
- Exercise 8 Using RACF for TSO administration (Optional)
- Exercise 9 RACF utilities (Optional)
- Exercise 10 RACF monitoring

#### Day 5

- Exercise review
- Unit 9 Storage management and RACF
- Unit 10 Security for JES facilities
- Unit 11 Security classification

### **Objective**

- Identify the security requirements of a system
- Evaluate the facilities and options of RACF
- Define users to RACF
- Set up a RACF group structure
- Use RACF to protect resources
- · Select options to tailor RACF

- Evaluate and implement RACF database and performance options
- Identify tools available for auditing
- Administer the system so that it is consistent with the installation's security goals

## Schulungsmethode

Live Online Training		
3. Apr 2023 bis 7. Apr 2023	15. Mai 2023 bis 19. Mai 2023	19. Jun 2023 bis 23. Jun 2023
26. Jun 2023 bis 30. Jun 2023	26. Jun 2023 bis 30. Jun 2023	17. Jul 2023 bis 21. Jul 2023
4. Sep 2023 bis 8. Sep 2023	23. Okt 2023 bis 27. Okt 2023	6. Nov 2023 bis 10. Nov 2023
11. Dez 2023 bis 15. Dez 2023		



## **IBM CM01G - IMS Fundamentals**

Live Online oder Präsenz

Dauer : 24h00 Nr. : 30415

Preis: 2.600,00 € netto 3.094,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn about the basic Information Management System (IMS) facilities: the IMS Database System and the IMS Transaction Manager (IMS/TM). Explore how these facilities work together and how application programs interact with them in today's complex enterprise systems.

This course has 30 hours of instruction.

### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This is a basic course for users who want a basic understanding of the IMS Database and IMS/TM products. Data processing individuals who work with or manage an IMS system (Database (DB), Database/Data Communications (DB/DC), or Database Control Subsystem (DBCTL)).

#### Voraussetzungen

## **Prerequisites**

You should have basic understanding of database management or transaction management along with working knowledge of z/OS concepts and tools and Job Control Language (JCL).

### **Trainingsprogramm**

## **Course Outline**

- IMS Database Fundamentals
- Accessing IMS Databases DL/I Calls
- IMS Hierarchic Access Methods

- Additional IMS Database Functions
- IMS Transaction Manager
- IMS Transaction Message processing
- IMS Fast path
- Connecting IMS to Other Systems
- Enhancing IMS Availability
- Business Integration of IMS Assets SOA

### Objective

- Understand the components and benefits of an IMS Database system
- Describe the processing of a database record in hierarchic sequence
- Identify the different IMS database organization types
- Understand the differences between Database Description (DBD) and Program Specification Block (PSB) control blocks
- Contrast the requirements and effects of sequential versus direct access of database segments
- Explain the reasons for the use of secondary indexes and logical relationships
- Contrast full-function and Fast Path database organizations
- List the basic IMS Data Communications functions of the IMS Transaction Manager (IMS/TM)
- Identify the roles of messages, queues, and logical terminal names
- Explain the different scheduling characteristics of the IMS/TM regions types: Message Processing, Batch Message Processing, and Interactive Fast Path
- Describe the role of commit points in recovery and restart
- Identify the functions of dynamic and batch backout, the system log and the benefits of periodically backing up a
- Explain the capabilities of a conversational program and its implications on processing and performance
- Describe the function of Database Recovery Control (DBRC), Integrated Resource Lock Manager (IRLM) for data sharing and distributed processing
- Understand how DB2 data can be accessed by IMS TM, IMS DB databases can be accessed through the DBCTL interface by CICS, and how IMS DB data and IMS TM transactions can be accessed from the internet

### Schulungsmethode

## **Live Online Training**

24. Apr 2023 bis 26. Apr 2023

1. Mai 2023 bis 3. Mai 2023

3. Jul 2023 bis 5. Jul 2023

18. Sep 2023 bis 20. Sep 2023



## IBM CM059G - IMS Installation Workshop

🙎 Live Online oder Präsenz

Dauer: 24h00 Nr.: 30093

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn how to successfully install and successfully maintain an Information Management System (IMS) system, with insights on common problems, how to avoid them and how to correct them should they occur. In the hands-on lab, select an IBM-supported Version of IMS to actually install, then install that IMS and run the IMS Installation Verification Program (IVP) process in the environment of your choice:

- Database Control (DBCTL)
- Database Coordinator Controller (DCCTL)
- Database/Data Communications (DB/DC)
- DB/DC with Extended Recovery Facility (XRF)

### Wer sollte teilnehmen:

### Zielgruppe

### **Audience**

This is an intermediate course for system programmers who install or maintain IMS.

#### Voraussetzungen

## **Prerequisites**

You should complete:

- IMS Fundamentals (CM010) or
- IMS Fundamental Web (CMW01)
- or have equivalent moderate IMS knowledge through work experience

You should also have:

- Basic understanding of System Modification Program/Extended (SMP/E)
- Basic understanding Job Control Language (JCL)

• Basic understanding of how to use the Interactive System Productivity Facility/Program Development Facility (ISPF/PDF) editor

### **Trainingsprogramm**

## **Course Outline**

- Packaging and Installation
- SMP/E Installation
- IMS IVP Dialog
- IMS Migration Considerations
- IMS Definition
- General IMS Maintenance Recommendations
- Hints and Tips for Successful Implementation and Maintenance of IMS

## **Objective**

- Review the steps involved in the Installation and IVP process for IMS
- Discuss IMS sysgen describing what it is as well as why we have it
- Review and explain IMS maintenance recommendations
- Review and explain IMS maintenance upgrades
- Discuss common problems clients encounter and their solutions
- Installation of an IMS system during lab

## Schulungsmethode

## **Live Online Training**

1. Mai 2023 bis 3. Mai 2023

3. Jul 2023 bis 5. Jul 2023

18. Sep 2023 bis 20. Sep 2023

11. Dez 2023 bis 13. Dez 2023



## IBM CM121G - IMS DBCTL Systems Programming

🙎 Live Online oder Präsenz

Dauer: 24h00 Nr.: 30211

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Database Control (DBCTL) is an Information Management System (IMS) facility that provides CICS access to an IMS database subsystem. DBCTL provides access for CICS transactions to IMS managed databases. Get a detailed description of the activities required to install, tailor, maintain, and support an IMS DBCTL system. Additionally, learn about aspects of the IMS architecture that apply to database management and attaching to CICS systems and transactions.

### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This is an intermediate course for IMS system programming and technical support individuals, who need to understand installation, customization, administration, and maintenance on a DBCTL system.

### Voraussetzungen

### **Prerequisites**

You should complete:

- IMS Fundamentals (CM010), or
- IMS Fundamentals Web (CMW01)
- or have equivalent knowledge

You should have some system programming experience with IMS and CICS systems.

### **Trainingsprogramm**

### **Course Outline**

- Introduction to IMS DBCTL
- IMS DBCTL Installation and Installation Verification Program (IVP) Dialog
- IMS DBCTL System Definition
- Preparing the operating system
- IMS Locking, IMS Logger, DBRC Overview and Syncpoint Processing
- Building the IMS DBCTL System
- Online Change and Dynamic Resource Definition (DRD)
- DBCTL Image Copy Utilities
- DBCTL operations
- IMS Application Scheduling flow in a DBCTL Environment
- The Open Data Base Access (ODBA) Feature
- Recovery Restart in a DBCTL Environment

### **Objective**

- Understand DBCTL in an IMS environment
- Design, install, and customize a DBCTL system according to application requirements
- Perform basic system administration for an IMS system with DBCTL including the operating and optimization of a CICS IMS Database Controller configuration

## **Schulungsmethode**

## **Live Online Training**

1. Mai 2023 bis 3. Mai 2023

3. Jul 2023 bis 5. Jul 2023

18. Sep 2023 bis 20. Sep 2023

11. Dez 2023 bis 13. Dez 2023



## **IBM CM17G - IMS Database Application Programming**

🙎 Live Online oder Präsenz

Dauer: 24h00 Nr.: 30304

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Learn how to write application programs that use Data Language One (DL/I) to process Information Management System (IMS) databases.

## Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This is an intermediate course for individuals who write programs in Common Business Oriented Language (COBOL), or Programming Language One (PL/I), or Assembler language using DL/I to navigate through an process IMS databases.

### Voraussetzungen

## **Prerequisites**

You should complete:

• IMS Fundamentals (CM010) or IMS Fundamentals - Web - ILO(CMW01)

and a COBOL or PL/I language course, or be able to:

- List the basic components of the IMS database system
- Construct a non-DL/I application program in COBOL or PL/I

### **Trainingsprogramm**

## **Course Outline**

- DL/I Environment
- DL/I Call Processing
- DL/I Rtrieval Calls
- DL/I Update Calls
- DL/I Programming Techniques: Part 1
- DL/I Advanced Segment Search Arguments SSAs: Part 1
- DL/I Test Program
- DL/I Programming Techniques: Part 2
- DL/I Advanced Segment Search Arguments SSAs: Part 2
- System Service Calls
- Programming Standards
- High Availability Large Database (HALDB) Access

### **Objective**

- Describe the basic differences between files and IMS databases as they relate to application program coding and logic
- Describe the terms and processing characteristics of IMS hierarchic data structures
- Construct DL/I calls for either COBOL or PL/I language programs
- Write, test and debug a batch application program that uses the DL/I call functions
- Use the IMS Test Program to prototype application program calls, and to perform ad-hoc read and update access to an IMS database
- Describe the applications and uses of other DL/I features
- Program for recovery and restart using DL/I calls to establish synchronization points
- Describe the functions provided by High Availability Large Database (HALDB), and any program differences when accessing a Full Function database or a HALDB

### **Schulungsmethode**

# **Live Online Training**

1. Mai 2023 bis 3. Mai 2023

3. Jul 2023 bis 5. Jul 2023

18. Sep 2023 bis 20. Sep 2023

11. Dez 2023 bis 13. Dez 2023



# **IBM CM18G - IMS Transaction Manager Application Programming**

🙎 Live Online oder Präsenz

Dauer: 16h00 Nr.: 30203

Preis : 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn how to write application programs that use Data Language One (DL/I) to process terminal input and output messages in an Information Management System / Data Communications (IMS/DC) system.

### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This intermediate course is for individuals responsible for writing programs in Common Business Oriented Language (COBOL), or Programming Language One (PL/I) using DL/I to communicate with terminals in an IMS/DC system.

Voraussetzungen

## **Prerequisites**

You should:

- complete:
  - IMS Fundamentals (CM010)orIMS Fundamentals -Web (CMW01)
  - IMS DB Application Programming (U3717)
- or be able to:
  - o Describe the basic control and flow of IMS/DC communications facilities
  - Understand the DL/I components and calls of a database application program
  - o Modify a program in COBOL or PL/I to add IMS/DC functions

## Trainingsprogramm

## **Course Outline**

- IMS TM System Overview
- Message Processing Programming
- Get/Send Terminal Data
- Message Format Services (MFS)
- Create and use MFS control blocks
- IMS/TM Additional Facilities

## **Objective**

- Modify an IMS batch DL/I application program to function in an IMS/DC environment: receiving a message from a terminal and sending output messages to terminals
- Handle the exception conditions that may occur using DL/I functions
- Work with Scratch Pad Areas (SPA) in an IMS-conversational program
- Understand the application program considerations in using Message Format Services (MFS) and the system service functions data structures

## Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 2. Mai 2023

3. Jul 2023 bis 4. Jul 2023

18. Sep 2023 bis 19. Sep 2023

11. Dez 2023 bis 12. Dez 2023



# IBM CM20G - IMS Database Recovery Control (DBRC)

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30054

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Learn all aspects, including installation, implementation, and management of the Database Recovery Control (DBRC) feature of Information Management System (IMS). DBRC is an IMS facility that provides database recovery, and facilitates database sharing, between IMS systems in all IMS environments including DB/TM, Data Base Control (DBCTL), and Batch. Reinforce the concepts and skills you have learned with machine labs.

### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This is an advanced course for IMS system programmers, Data Base Administrators (DBA) and technical support individuals who need to understand DBRC installation, customization, administration and maintenance in an IMS System.

#### Voraussetzungen

### **Prerequisites**

You should have completed:

- IMS Fundamentals (CM010)
- or IMS Fundamentals Web ILO (CMW01)
- or have equivalent knowledge

You should also have a minimum of 12 months system programming or database administration experience with IMS databases.

### **Trainingsprogramm**

### **Course Outline**

- DBRC Overview
- DBRC Implementation
- Database Registration
- Recording Log Information
- Data Sharing
- Subsystem Authorization
- GENJCL (GENerate JCL)
- Utilities
- RECON Maintenance and Recovery
- Security

## **Objective**

- Install, implement, and manage the DBRC (DataBase Recovery Control) component of IMS (Information Management System)
- Identify and list the basic elements of DBRC
- Describe the processing of DBRC records
- Describe the data sharing environment
- Describe the subsystem interaction and database authorization process
- Register full-function, Fast Path, HALDB, and non-recoverable databases, and their data sets
- Define and register Database Data Set Groups, Data Groups, and Recovery Groups
- Define and register change accumulation groups
- Describe installation tasks for DBRC and RECON (REcovery CONtrol) data sets

### Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 5. Mai 2023

3. Jul 2023 bis 7. Jul 2023

18. Sep 2023 bis 22. Sep 2023

11. Dez 2023 bis 15. Dez 2023



# IBM CM241G - IMS Logical Relationships

🙎 Live Online oder Präsenz

Dauer : 32h00 Nr. : 30329

Preis : 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn how to successfully implement and tune Information Management System (IMS) databases with IMS logical relationships. Examine in detail the various pointer options. Practice these skills in intensive machine-lab exercises.

### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

People responsible for designing, implementing, maintaining, or tuning IMS databases using logical relationships.

Voraussetzungen

### **Prerequisites**

You should have at least four months of experience using IMS and should be able to:

- • Use TSO/ISPF or PDF
- • Demonstrate basic knowledge of:
  - o OS/VS Job Control Language
  - VSAM access methods service utilities
  - DL/I application programming techniques
- Describe the characteristics and storage format of HISAM, HIDAM and HDAM databases and code their DBDs
- Understand the IMS DB Monitor and use its reports to resolve database performance concerns

These skills can be developed by attending:

- IMS Physical Organization of Databases Workshop (CM22)
- IMS Database Performance and Tuning Workshop (CM30)

## **Trainingsprogramm**

## **Course Outline**

- Introduction to Logical Relationships
- Unidirectional Logical Relationships
- Unidirectional Logical Data Structures
- Bidirectional Logical Relationships
- Bidirectional Logical Data Structures
- Database Load and Reorganization
- Recursive Structures
- ISRT Rules and Exercise
- Logical Relationship Performance
- Logical Relationship Tuning
- Design and Change Considerations

## **Objective**

- Code the DBDs and PSBs for databases involved in logical relationships, including those using recursive data structures
- Use IMS utilities to load and reorganize logically related databases
- Choose logical relationship update rules based upon application processing requirements
- Identify DBD coding parameters that are critical to the performance of logically related databases
- Interpret the results of logical relationship implementation choices using the reports provided by the IMS Monitor

### **Schulungsmethode**

# **Live Online Training**

1. Mai 2023 bis 4. Mai 2023

3. Jul 2023 bis 6. Jul 2023

18. Sep 2023 bis 21. Sep 2023

11. Dez 2023 bis 14. Dez 2023



# IBM CM30G - IMS Database Performance and Tuning

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30031

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Learn how to tune Information Management System (IMS) databases for use in IMS/Batch, IMS/Data Communications (DC), CICS-Local-Data Language One (DL/I), and Data Base Control (DBCTL) environments.

Explore the IMS database features that affect performance such as data set considerations and buffers for VSAM and OSAM. You will also practice a method for estimating performance before implementation. Plus, you will reinforce the skills you have learned with seven machine labs.

IACET Continuing Education Units: 4.0

### Wer sollte teilnehmen:

#### Zielgruppe

#### **Audience**

This intermediate course is for ndividuals interested in the performance of the IMS Database System.

Voraussetzungen

## **Prerequisites**

You should complete:

• IMS Physical Organization of Databases Workshop (U3722)

or have four to six months experience with the IMS database system.

For additional prerequisites visit our Web site and search on U3720.

 Describe the physical storage and processing characteristics of Hierarchial Indexed Sequential Access Method (HISAM), Hierarchial Indexed Direct Access Method (HIDAM), and Hierarchial Direct Access Method (HDAM) access methods.

- Code the Data Base Definitions (DBD) and Program Specification Blocks (PSB) macros to implement secondary indexing, HISAM, HIDAM, and HDAM physical databases.
- Describe the physical storage characteristics of secondary indexes.
- Describe the PSB and programming requirements and processing characteristics when using a secondary index.
- Use the IMS utilities to load and reorganize logically related databases with secondary indexes.
- Use Virtual Storage Access Method (VSAM)s access method services to delete and define the Key-Sequenced Data Set (KSDS) and Entry-Sequenced Data Set (ESDS) data sets needed to support the database environment.
- Use reports created by the database tool's program, DBD/PSB/ACB MapperSpecify buffers for VSAM data set supported databases

## **Trainingsprogramm**

## **Course Outline**

- Introduction to IMS database tuning
- Introduction to the lab project
- Review of the IMS access methods
- Measuring IMS database performance
- Lab 1: The base case
- Lab 2: Using IMS Reports
- Tuning VSAM buffers
- Lab 3: Tuning VSAM buffers
- Tuning VSAM data sets
- Lab 4: Tuning VSAM data sets
- Additional performance issues
- Tuning secondary indexes
- Lab 5: Tuning secondary indexes
- Tuning HDAM
- Lab 6: Tuning HDAM
- Tuning OSAM data sets and buffers
- Lab 7: OSAM data sets and buffers
- Other tuning considerations
- Database tuning summary

### Objective

- Analyze performance data about the IMS database environment
- Choose IMS access methods that provide the best database performance
- Improve performance by selecting database buffer pools and buffer pool options and with the correct data set access method and storage attributes
- Implement the optimum performance options for VSAM data sets at define and execute time
- Evaluate the need for secondary indexes and select implementation options to improve their performance
- · Choose physical database implementation options to improve performance
- Select HDAM randomizing parameters that can improve the key randomization process

### Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 5. Mai 2023

3. Jul 2023 bis 7. Jul 2023

18. Sep 2023 bis 22. Sep 2023

11. Dez 2023 bis 15. Dez 2023



# IBM CM43G - IMS Security

🙎 Live Online oder Präsenz

Dauer : 32h00 Nr. : 30149

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Learn implementation for Information Management System (IMS) using Resource Access Control Facility (RACF) as the external security manager, and the installation provided security exit routines. Apply classroom lectures with security paper lab exercises in which you setup the security definitions.

### Wer sollte teilnehmen:

#### Zielgruppe

### **Audience**

This is an intermediate course for security and IMS support individuals who design, implement, or administer security for IMS systems.

#### Voraussetzungen

### **Prerequisites**

You should be familiar with RACF or IMS.

### **Trainingsprogramm**

### **Course Outline**

- Introduction to IMS Security
- IMS Security Facilities
- IMS Security Options
- Introduction to RACF
- User ID and Sign On Verification
- Securing the IMS Control Region
- IMS Transaction Security

- IMS Command Security
- Security for Time Controlled Operations
- IMS Resource Access Security (RAS)
- IMS Database Security
- IMS Data Set Security
- Common Service Layer Security
- Security in an IMS Database Control Environment
- IMS and DB2 Security

### **Objective**

- Identify the IMS resources that must be protected
- Identify the types of security facilities available for each resource
- Develop a plan to implement security on your IMS systems
- Identify the tasks required in IMS and RACF to implement security
- Implement security for each resource using an appropriate security facility
- Code the security definitions in IMS and RACF to protect transactions, commands, data, dependent regions, Program Specification Blocks (PSB), terminals and other resources

## Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 4. Mai 2023

3. Jul 2023 bis 6. Jul 2023

18. Sep 2023 bis 21. Sep 2023

11. Dez 2023 bis 14. Dez 2023



# IBM CM46G - IMS High Availability Large Database (HALDB)

🙎 Live Online oder Präsenz

Dauer: 8h00 Nr.: 30067

Preis: 800,00 € netto 952,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Learn about the Information Management System (IMS) High Availability Large Database (HALDB). Examine how databases may be migrated to HALDB and the advantages of using HALDB.

# Wer sollte teilnehmen:

### **Zielgruppe**

### **Audience**

This is an intermediate course for IMS database administrators, who implement and manage HALDB.

#### Voraussetzungen

## **Prerequisites**

You should complete:

- Physical Organization of Databases (CM220) or
- Physical Organization of Databases Web (CMW22)
- or have equivalent work experience.

You should have:

- working knowledge of IMS full function databases
- database administrator responsibilities for their support.

### **Trainingsprogramm**

## **Course Outline**

- Overview
- Database Structures
- Definition
- Partition Selection
- DBRC Support
- Database Commands
- Utilities
- Database Creation and Migration
- Changing Databases
- Secondary Indexes
- Application and Miscellaneous Considerations
- HALDB Online Reorganization
- Summary

## **Objective**

- Define HALDB databases and their partitions
- Understand database administrator responsibilities in managing HALDB
- Develop procedures for the support and recovery of HALDB
- Migrate databases to the use of HALDB
- Understand application design for HALDB

## Schulungsmethode

## **Live Online Training**

1. Mai 2023

3. Jul 2023

18. Sep 2023

11. Dez 2023



# IBM CM50G - IMS Data Sharing

🙎 Live Online oder Präsenz

Dauer: 24h00 Nr.: 30424

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Learn about Information Management System (IMS) data sharing capabilities. Examine how multiple IMS systems on different processors can access and update the same databases with complete integrity.

# Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This is an advanced course for IMS system programmers and database administrators, who implement and manage IMS systems using data sharing.

#### Voraussetzungen

## **Prerequisites**

You should complete:

- IMS Database Recovery Control (DBRC) and Data Sharing (CM201) or
- IMS Database Recovery Control (DBRC) and Data Sharing Web (CMW20)
- or have equivalent work experience

You should have working knowledge of IMS databases and the use of DBRC.

### **Trainingsprogramm**

### **Course Outline**

- Introduction to Data Sharing
- Overview of Data Sharing Functions

- Locking
- Buffer invalidations and notifies
- Installation and definition
- Utilities
- Normal operation
- Recovery operations
- Monitoring and diagnostic tools
- Performance considerations
- Batch considerations
- Data sharing configurations and migration

## Objective

- Define IMS subsystems, Internal Resource Lock Manager (IRLM), and coupling facilities to use IMS data sharing
- Design recovery procedures for failures in the data sharing environment
- Understand application design considerations with IMS data sharing
- Monitor the performance of a data sharing environment
- Explain IRLM and coupling facility roles in support of IMS data sharing

## Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 3. Mai 2023

3. Jul 2023 bis 5. Jul 2023

18. Sep 2023 bis 20. Sep 2023

11. Dez 2023 bis 13. Dez 2023



# **IBM CM611G - IMS Shared Queues**

🙎 Live Online oder Präsenz

Dauer : 20h00 Nr. : 30419

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course is designed to teach students about a key availability and capacity enhancement to Information Management System (IMS) - the Shared Queues facility, which offers the ability to share full function message queues within a parallel sysplex environment. Also, learn about sharing Fast Path Expedited Message Handler (EMH) queues within a parallel sysplex environment.

### Wer sollte teilnehmen:

#### Zielgruppe

### **Audience**

This is an advanced course for experienced IMS programmers, IMS Database (DB) and Transaction Manager (TM) system administrators, IMS application designers, and IMS operations individuals who plan, implement, and support IMS Shared Queues.

#### Voraussetzungen

### **Prerequisites**

You should:

- Complete IMS Data Sharing Instructor Led Online (CMW50) or (CM50)
- Have moderate-level knowledge of IMS Data Sharing
- Have moderate system programming experience with IMS systems.

### **Trainingsprogramm**

### **Course Outline**

Introduction

- IMS, CQS, and Shared Queues Mainline Processing
- Enabling Shared Queues
- Special Considerations

### **Objective**

- Describe the hardware and software components of IMS Shared Queues
- Understand how the initial IMS configuration impacts planning for the implementation of Shared Queues
- Identify the key migration and operational considerations of IMS Shared Queues implementation
- Implement, initialize, and access IMS Shared Message Queues (MSGQ) and Shared EMH Queues (EMHQ)
- Describe how IMS queues, schedules and process transactions in a Shared Queues environment
- Identify MSC and conversational processing considerations as well as log records associated with an IMS Shared Queues environment
- Use IMS exits and XCF commands related to IMS Shared Queues
- Tailor IMS system definitions and execution time parameters associated with IMS Shared Queues

### Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 3. Mai 2023

3. Jul 2023 bis 5. Jul 2023

18. Sep 2023 bis 20. Sep 2023

11. Dez 2023 bis 13. Dez 2023



### IBM CM64G - IMS Fast Path

🙎 Live Online oder Präsenz

Dauer : 36h00 Nr. : 30189

Preis : 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course is designed to describe the features and functions of Fast Path both from a capability and an implementation perspective.

## Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This is an advanced course for IMS application designers, application programmers, system administrators, and database administrators, who design or implement IMS Fast Path applications in an IMS Transaction Management (TM) or CICS Database Control (DBCTL) environment.

#### Voraussetzungen

## **Prerequisites**

You should complete:

- IMS Fundamentals (CM010) or
- IMS Fundamental Web ILO (CMW01) or have equivalent work experience

## **Trainingsprogramm**

## **Course Outline**

- Overview of IMS Fast Path
- Expedited Message Handler (EMH)
- Main Storage Database (MSDB)
- Data Entry Database (DEDB)

- Fast Path System Functions
- Parallel Sysplex Exploitation
- Fast Path Administration
- Fast Path Operations
- Application Programming and Design

## **Objective**

- Identify the components of IMS Fast Path
- Describe the features and functions of each component
- Explain the benefits and restrictions of each component
- Describe the processing of Fast Path resources within the IMS TM and DB Control environment
- Design and implement an Expedited Message Handler (EMH) environment
- Design and implement Fast Path databases (DEDBs and MSDBs)
- Implement High Speed Sequential Processing (HSSP)
- Implement the DEDB Virtual Storage Option
- Plan and implement the conversion of MSDBs to VSO-DEDBs
- Develop an effective buffer pool strategy
- Implement database and system recovery in a Fast Path environment
- Implement data sharing for Fast Path DEDBs
- Understand the benefits of Shared EMH
- Write application calls to Fast Path databases
- Design operator procedures for managing Fast Path resources

# Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 5. Mai 2023

3. Jul 2023 bis 7. Jul 2023

18. Sep 2023 bis 22. Sep 2023

11. Dez 2023 bis 15. Dez 2023



### **IBM CMW01G - IMS Fundamentals**

Live Online oder Präsenz

Dauer: 24h00 Nr.: 30166

Preis: 4.800,00 € netto 5.712,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn about the basic Information Management System (IMS): IMS facilities, the IMS database system, and the IMS Transaction Manager (IMS/TM). Explore how these facilities work together and how application programs interact with them in today's complex enterprise systems.

This course has 30 hours of instruction.

This course uses a Web conference medium with live instructor audio and Internet Web conferenced material. You have chat-type Question and Answer (Q and A) ability, plus live audio. The course is taught 10:00 a.m. to 12:00 noon and 1:00 p.m. to 4:00 p.m. Central time for six work days over a two-week period. Since the course is taught live using Web conferencing methods, you can attend from your home or work. Class durations are approximately one-half day so you can still accommodate daily work responsibilities. You will be contacted prior to class start to receive connection information, hardcopy student materials, and other relevant information.

#### Course Materials

You will be contacted prior to class start to receive connection information, hardcopy student materials, and other relevant information.

### Wer sollte teilnehmen:

### **Zielgruppe**

### **Audience**

This is a basic course for users, who want a basic understanding of the IMS database and IMS/TM products, and Information Technology professionals, who work with or manage an IMS system (Database (DB), Database/Data Communications (DB/DC), or Database Control Subsystem (DBCTL)).

#### Voraussetzungen

### **Prerequisites**

You should have basic understanding of database management or transaction management along with working knowledge of z/OS concepts and tools and Job Control Language (JCL).

### **Trainingsprogramm**

### **Course Outline**

- IMS Database Fundamentals
- Accessing IMS Databases DL/I Calls
- IMS Hierarchic Access Methods
- Additional IMS Database Functions
- IMS Transaction Manager
- IMS Transaction Message processing
- IMS Fast path
- Connecting IMS to Other Systems
- Enhancing IMS Availability
- Business Integration of IMS Assets SOA

### **Objective**

- Understand the components and benefits of an IMS Database system
- Describe the processing of a database record in hierarchic sequence
- Identify the different IMS database organization types
- Understand the differences between Database Description (DBD) and Program Specification Block (PSB) control blocks
- · Contrast the requirements and effects of sequential versus direct access of database segments
- Explain reasons for the use of secondary indexes and logical relationships
- Contrast full-function and Fast Path database organizations
- List the basic IMS Data Communications functions of the IMS Transaction Manager (IMS/TM)
- Identify the roles of messages, queues, and logical terminal names
- Explain the different scheduling characteristics of the IMS/TM regions types: Message Processing, Batch Message Processing, and Interactive Fast Path
- Describe the role of commit points in recovery and restart
- Identify the functions of dynamic and batch backout, the system log and the benefits of periodically backing up a database
- Explain the capabilities of a conversational program and its implications on processing and performance
- Describe the function of Database Recovery Control (DBRC), Integrated Resource Lock Manager (IRLM) for data sharing and distributed processing
- Understand how DB2 data can be accessed by IMS TM, IMS DB databases can be accessed through the DBCTL interface by CICS, and how IMS DB data and IMS TM transactions can be accessed from the internet

### Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 3. Mai 2023

3. Jul 2023 bis 5. Jul 2023

18. Sep 2023 bis 20. Sep 2023

11. Dez 2023 bis 13. Dez 2023



# IBM CMW20G - IMS Database Recovery Control (DBRC)

Live Online oder Präsenz

Dauer: 40h00 Nr.: 30142

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn all aspects, including installation, implementation, and management of the Database Recovery Control (DBRC) system of Information Management System (IMS). DBRC is an IMS facility that provides database recovery, and facilitates database sharing, between IMS systems in all IMS environments including DB/TM Data Base Control (DBCTL) and Batch. Reinforce the concepts and skills you have learned with machine labs.

This course is taught in a Web conference medium with live instructor audio, and Internet Web conferenced materials. You have chat type Question and Answer (Q and A) ability, plus live audio. The course is taught 10:00 a.m. to 12 noon and 1:00 p.m. to 3:00 p.m. Central time for eight work days over a two week period. Since the class is taught live using Web conferencing methods, you can attend from your home or work. Class durations are approximately one-half day so you can still accommodate daily work responsibilities.

Course Materials

Course materials will be provided in softcopy format and possibly hardcopy format also. You will receive connection software and usage information.

### Wer sollte teilnehmen:

### Zielgruppe

### **Audience**

This is an advanced course for IMS system programmers, Data Base Administrators (DBA) and technical support individuals who need to understand DBRC installation, customization, administration and maintenance in an IMS System.

Voraussetzungen

### **Prerequisites**

You should complete:

- IMS Fundamentals(CM01G)or
- IMS Fundamentals Web (CMW01G)
- or have equivalent knowledge

You should also have a minimum of 12 months system programming or database administration experience with IMS databases.

## **Trainingsprogramm**

## **Course Outline**

- DBRC Overview
- DBRC Implementation
- Database Registration
- Recording Log Information
- Data Sharing
- Subsystem Authorization
- GENJCL (GENerate JCL)
- Utilities
- RECON Maintenance and Recovery
- Security

## **Objective**

- Install, implement, and manage the DBRC (DataBase Recovery Control) component of IMS (Information Management System)
- Identify and list the basic elements of DBRC
- Describe the processing of DBRC records
- Describe the data sharing environment
- Describe the subsystem interaction and database authorization process
- Register full-function, Fast Path, HALDB, and non-recoverable databases, and their data sets
- Define and register Database Data Set Groups, Data Groups, and Recovery Groups
- Define and register change accumulation groups
- Describe installation tasks for DBRC and RECON (REcovery CONtrol) data sets

### **Schulungsmethode**

# **Live Online Training**

1. Mai 2023 bis 5. Mai 2023

3. Jul 2023 bis 7. Jul 2023

18. Sep 2023 bis 22. Sep 2023

11. Dez 2023 bis 15. Dez 2023



## IBM CMW21G - IMS TM Performance and Tuning

🙎 Live Online oder Präsenz

Dauer : 24h00 Nr. : 30258

Preis: 4.800,00 € netto 5.712,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn a methodology to improve the performance of a large-scale z/OS IMS/TM data communication system. This course explains the impact of user-specified options on IMS performance, how to determine performance bottlenecks by interpreting information from certain performance reports, and how to use the information gained to implement a plan to improve the performance of an IMS system.

### Wer sollte teilnehmen:

### **Zielgruppe**

#### **Audience**

This advanced course is for experienced IMS system programmers or performance analysts responsible for the performance of a large-scale IMS DB/DC system.

#### Voraussetzungen

### **Prerequisites**

You should have moderate level of knowledge of IMS/TM which can be gained through work experience or through completing the IMS System Programming: Database and Transaction Management - ILO (CMW11)

### **Trainingsprogramm**

### **Course Outline**

- Monitoring and Tuning Overview
- IMS Structure and Major Control Blocks
- The IMS Logger and Pool Management
- IMS Communication Component
- IMS OTMA (Open Transaction Management Access) Communication Component

- z/OS Considerations for IMS
- IMS Scheduling
- IMS Program Loading Options
- IMS Program Elapsed Time
- IMS Database Buffering

## **Objective**

- Create and implement a performance improvement plan based on the methodology presented
- Discuss the performance options available to the IMS user
- Describe the performance impact of the IMS storage pools and datasets and their interrelationships
- Interpret the information contained in performance reports
- Analyze the performance reports to determine performance bottlenecks in the IMS system

## Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 3. Mai 2023

3. Jul 2023 bis 5. Jul 2023

18. Sep 2023 bis 20. Sep 2023

11. Dez 2023 bis 13. Dez 2023



# IBM CMW22G - IMS Physical Organization of Databases

Live Online oder Präsenz

Dauer : 32h00 Nr. : 30041

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn how to design, implement, reorganize, and recover Information Management System (IMS) databases. Practice these skills in intensive machine labs.

This course uses a Web conference medium with live instructor audio and Internet Web conferenced material. You have chat-type Question and Answer (Q and A) ability, plus live audio. The course is taught 10:00 a.m. to 12:00 noon and 1:00 p.m. to 3:00 p.m. Central time for eight work days over a two-week period. Since the course is taught live using Web conferencing methods, you can attend from your home or work. Class durations are approximately one-half day so you can still accommodate daily work responsibilities. You will be contacted prior to class start to receive connection information, hardcopy student materials, and other relevant information.

#### Course Materials

You will be contacted prior to class start to receive connection information, hardcopy student materials, and other relevant information.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This is a basic level course for database administrators, system programmers, and other data administration individuals, who design, implement, and maintain IMS databases.

#### Voraussetzungen

### **Prerequisites**

You should have basic understanding of IMS product features and organization along with working knowledge of z/OS tools, Virtual Storage Access Method (VSAM) services utilities, and Job Control Language (JCL).

# **Trainingsprogramm**

## **Course Outline**

- Introduction to DL/I
- IMS Access Methods
- HISAM
- DBD/PSB/Data Sets/JCL
- IMS Test Utility: DFSDDLT0
- HD Access Methods
- HIDAM
- HDAM
- Database Reorganization
- IMS Data Sets Summary
- Secondary Indexing
- Database Recovery
- Database Design Considerations
- IMS Space Utilization

# **Objective**

You will learn to:

- Code the Database Directories (DBD) and Program Specification Blocks (PSB) for physical databases
- Code the DBDs and PSBs to implement secondary indexing
- Use the appropriate IMS utilities to reorganize and recover physical databases, including those with secondary indexes
- Use the DL/I test program
- Prepare a job stream to load a database using different IMS access methods

## Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 4. Mai 2023

3. Jul 2023 bis 6. Jul 2023

18. Sep 2023 bis 21. Sep 2023

11. Dez 2023 bis 14. Dez 2023



# IBM CMW30G - IMS Database Performance and Tuning

Live Online oder Präsenz

Dauer: 40h00 Nr.: 30390

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn how to tune Information Management System (IMS) databases.

Explore the IMS database features that affect performance, such as data set considerations and buffers for Virtual Storage Access Method (VSAM) and Overflow Sequential Access Method (OSAM). Also, practice a method for estimating performance before implementation. Plus, reinforce the skills you have learned with seven machine labs.

This course is taught in a Web conference medium with live instructor audio, and Internet Web conferenced materials. You have chat type Questions and Answers (Q and A) ability, plus live audio. The course is taught 10:00 a.m. to 12 noon and 1:00 p.m. to 3:00 p.m. Central time for ten work days over a two-week period. Since the class is taught live using Web conferencing methods, you can attend from your home or work. Class durations are approximately one-half day so you can still accommodate daily work responsibilities.

You will be contacted prior to class start to receive connection information, hardcopy materials, and other relevant information.

#### Wer sollte teilnehmen:

#### Zielgruppe

#### **Audience**

This is an advanced course for IMS system programmers, Data Base Administrators (DBA) and technical support individuals who are responsible for the performance of IMS Databases.

#### Voraussetzungen

## **Prerequisites**

You should complete:

- Physical Organization of Databases (CM220)
- or IMS Physical Organization of Databases Workshop Web (CMW22)

and have the six to twelve months experience with the IMS database system needed to understand IMS Database design choices.

Prerequisite knowledge includes being able to:

- Describe the physical storage and processing characteristics of Hierarchical Indexed Sequential Access Method (HISAM), Hierarchical Indexed Direct Access Method (HIDAM), and Hierarchical Direct Access Method (HDAM) access methods.
- Code the Data Base Definitions (DBD) and Program Specification Blocks (PSB) macros to implement secondary indexing, HISAM, HIDAM, and HDAM physical databases.
- Describe the physical storage characteristics of secondary indexes.
- Describe the PSB and programming requirements and processing characteristics when using a secondary index.
- Use the IMS utilities to load and reorganize logically related databases with secondary indexes.
- Use Virtual Storage Access Method (VSAM)s access method services to delete and define the Key-Sequenced Data Set (KSDS) and Entry-Sequenced Data Set (ESDS) data sets needed to support the database environment.
- Use reports created by the database tool's program, DBD/PSB/ACB Mapper
- Specify buffers for VSAM data set supported databases

## **Trainingsprogramm**

### **Course Outline**

- Introduction to IMS database tuning
- Introduction to the lab project
- Review of the IMS access methods
- Measuring IMS database performance
- Tuning VSAM buffers
- Tuning VSAM data sets
- Additional performance issues
- Tuning secondary indexes
- Tuning HDAM
- Tuning OSAM data sets and buffers
- Other tuning considerations
- Database tuning summary

#### Objective

- Analyze performance data about the IMS database environment
- Choose IMS access methods that provide the best database performance
- Improve performance by selecting database buffer pools and buffer pool options and with the correct data set access method and storage attributes
- Implement the optimum performance options for VSAM data sets at define and execute time
- · Evaluate the need for secondary indexes and select implementation options to improve their performance
- Choose physical database implementation options to improve performance
- Select Hierarchical Direct Access Method (HDAM) randomizing parameters that can improve the key randomization process

### Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 5. Mai 2023



# **IBM CMW43G - Implementing IMS Security**

🙎 Live Online oder Präsenz

Dauer: 32h00 Nr.: 30399

Preis: 6.400,00 € netto 7.616,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn implementation for Information Management System (IMS) using Resource Access Control Facility (RACF) as the external security manager, and the installation provided security exit routines. Apply classroom lectures with security workshop exercises in which you setup the security definitions.

This course is taught in a Web conference medium with live instructor audio, and Internet Web conferenced materials. You have chat type Question and Answer (Q and A) ability, plus live audio. The course is taught 10:00 a.m. to 12 noon and 1:00 p.m. to 3:00 p.m. Central time for eight work days over a two week period. Since the class is taught live using Web conferencing methods, you can attend from your home or work. Class durations are approximately one-half day so you can still accommodate daily work responsibilities.

# Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This is an intermediate course for security and IMS support individuals who design, implement, or administer security for IMS systems.

## Voraussetzungen

## **Prerequisites**

You should be familiar with RACF or IMS.

## **Trainingsprogramm**

### **Course Outline**

Introduction to IMS Security

- IMS Security Facilities
- IMS Security Options
- Introduction to RACF
- User ID and Sign On Verification
- Securing the IMS Control Region
- IMS Transaction Security
- IMS Command Security
- Security for Time Controlled Operations
- IMS Resource Access Security (RAS)
- IMS Database Security
- IMS Data Set Security
- Common Service Layer Security
- Security in an IMS Database Control Environment
- IMS and DB2 Security

## **Objective**

- Identify the tasks that must be done in IMS, RACF, and SMU to implement security
- Develop a plan to implement security on your IMS systems
- Code the security definitions in IMS, RACF, and SMU to protect transactions, commands, data, dependent regions, Parse Descriptor Blocks (PDB), terminals and other resources
- Migrate from IMS internal SMU security to RACF security
- Protect IMS system resources so IMS itself has access but others, such as Time Sharing Option (TSO) users or batch jobs, are denied access
- Define IMS terminal users to RACF and restrict the IMS regions to which these users are allowed to sign-on

### **Schulungsmethode**

# **Live Online Training**

1. Mai 2023 bis 4. Mai 2023

3. Jul 2023 bis 6. Jul 2023

18. Sep 2023 bis 21. Sep 2023



# IBM CMW50G - IMS Data Sharing

🙎 Live Online oder Präsenz

Dauer: 48h00 Nr.: 30120

Preis: 4.800,00 € netto 5.712,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This is an online course. please do not make travel arrangements for this course. After you receive confirmation that you are enrolled, you will be sent further instructions to enroll in this clas.

Learn about Information Management System (IMS) data sharing capabilities. Examine how multiple IMS systems on different processors can access and update the same databases with complete integrity.

### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This is an advanced course for IMS system programmers and database administrators, who implement and manage IMS systems using data sharing.

#### Voraussetzungen

# **Prerequisites**

You should complete:

- IMS Database Recovery Control (DBRC) and Data Sharing (CM201)or
- IMS Database Recovery Control (DBRC) and Data Sharing Web (CMW20)
- or have equivalent work experience

You should have working knowledge of IMS databases and the use of DBRC.

## **Trainingsprogramm**

# **Course Outline**

- Introduction to Data Sharing
- Overview of Data Sharing Functions
- Locking
- Buffer invalidations and notifies
- Installation and definition
- Utilities
- Normal operation
- Recovery operations
- Monitoring and diagnostic tools
- Performance considerations
- Batch considerations
- Data sharing configurations and migration

### **Objective**

- Define IMS subsystems, Internal Resource Lock Manager (IRLM), and coupling facilities to use IMS data sharing
- Design recovery procedures for failures in the data sharing environment
- Understand application design considerations with IMS data sharing
- Monitor the performance of a data sharing environment
- Explain IRLM and coupling facility roles in support of IMS data sharing.

## **Schulungsmethode**

# **Live Online Training**

1. Mai 2023 bis 5. Mai 2023

3. Jul 2023 bis 7. Jul 2023

18. Sep 2023 bis 22. Sep 2023

11. Dez 2023 bis 15. Dez 2023



# **IBM CMW61G - IMS Shared Queues**

🙎 Live Online oder Präsenz

Dauer : 20h00 Nr. : 30236

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This is an online courses. Please do not make travel arrangements for this course. After you receive confirmation that you are enrolled, you will be sent further instructions to access audio and video.

This course of 5 sessions, 4 hours each day, is designed to teach you about a key availability and capacity enhancement to Information Management System (IMS) - the Shared Queues facility, which offers the ability to share full function message queues within a parallel sysplex environment. Also, learn about sharing Fast Path Expedited Message Handler (EMH) queues within a parallel sysplex environment.

## Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This is an intermediate course for experienced IMS programmers, IMS Database (DB) and Transaction Manager (TM) system administrators, IMS application designers, and IMS operations individuals who plan, implement, and support IMS Shared Queues.

#### Voraussetzungen

### **Prerequisites**

You should:

- Complete IMS Data Sharing (CM500) orIMS Data Sharing Instructor Led Online (CMW50) or
- have moderate-level knowledge of IMS Data Sharing

# **Trainingsprogramm**

## **Course Outline**

- Introduction to Shared Queues
- IMS CQS and Shared Queues Mainline Processing
- Enabling Shared Queues
- Special Considerations

## **Objective**

- Describe the hardware and software components of IMS Shared Queues
- Understand how the initial IMS configuration impacts planning for the implementation of Shared Queues
- Identify the key migration and operational considerations of IMS Shared Queues implementation
- Implement, initialize, and access IMS Shared Message Queues (MSGQ) and Shared EMH Queues (EMHQ)
- Describe how IMS Queues, Schedules and processes transactions in a Shared Queues environment
- Identify MSC and conversational processing considerations as well as log records associated with an IMS Shared Queues environment
- Use IMS exits and XCF commands related to IMS Shared Queues
- Tailor IMS System definitions and execution time parameters associated with IMS Shared Queues

## Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 3. Mai 2023

3. Jul 2023 bis 5. Jul 2023

18. Sep 2023 bis 20. Sep 2023

11. Dez 2023 bis 13. Dez 2023



## IBM CMW64G - IMS Fast Path

Live Online oder Präsenz

Dauer : 36h00 Nr. : 30283

Preis : 7.200,00 € netto 8.568,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn the features and functions of Information Management System (IMS) Fast Path from both a capability perspective and an implementation perspective.

There is something in this course for all Information Technology (IT) professionals, including applications, systems, and database practitioners. The instructor assumes that you already have an understanding of IMS Database / Transaction Manager (DB/TM) fundamentals and that the information presented here builds upon that knowledge.

This course is taught in a Web conference medium with live instructor audio and Internet Web conferenced materials. You have chat type Questions and Answers (Q&A) ability, plus live audio. The course is taught 10 a.m. to 12 noon and 1 p.m. to 3 p.m. Central Time for nine work days. Since the class is taught live using Web conferencing methods, you can attend from your home or workplace. Class durations are approximately one-half day so you can still accommodate daily work responsibilities.

You will be contacted the week prior to class start to receive connection information, hardcopy student materials, and any other relevant information.

### Wer sollte teilnehmen:

#### Zielgruppe

### **Audience**

This is an advanced course for IMS application designers, application programmers, system administrators, and database administrators, who design or implement IMS Fast Path applications in an IMS Transaction Management (TM) or CICS Database Control (DBCTL) environment.

Voraussetzungen

### **Prerequisites**

You should complete:

- IMS Fundamentals (CM010) or
- IMS Fundamental Web (CMW01)
- or have equivalent moderate IMS knowledge through work experience

## **Trainingsprogramm**

#### **Course Outline**

- Overview of IMS Fast Path
- Expedited Message Handler (EMH)
- Main Storage Database (MSDB)
- Data Entry Database (DEDB)
- Fast Path System Functions
- Parallel Sysplex Exploitation
- Fast Path Administration
- Fast Path Operations
- Application Programming and Design

## **Objective**

- Identify the components of IMS Fast Path
- Describe the features and functions of each component
- Explain the benefits and restrictions of each component
- Describe the processing of Fast Path resources within the IMS TM and DBCTL environment
- Design and implement an Expedited Message Handler (EMH) environment
- Design and implement Fast Path databases (Data Entry Database (DEDB) and Main Storage Data Base (MSDB))
- Implement High Speed Sequential Processing (HSSP)
- Implement the DEDB Virtual Storage Option (VSO)
- Plan and implement the conversion of MSDBs to VSO-DEDBs
- Develop an effective buffer pool strategy
- Implement database and system recovery in a Fast Path environment
- Implement data sharing for Fast Path DEDBs
- Understand the benefits of shared EMH
- Write application calls to Fast Path databases
- Design operator procedures for managing Fast Path resources

### **Schulungsmethode**

# **Live Online Training**

1. Mai 2023 bis 5. Mai 2023

3. Jul 2023 bis 7. Jul 2023

18. Sep 2023 bis 22. Sep 2023



# IBM CMW66G - IMS Diagnostic Approaches

Live Online oder Präsenz

Dauer : 24h00 Nr. : 30084

Preis: 4.800,00 € netto 5.712,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This class will teach you to understand the IMS software diagnostic process and to know what documentation is required to solve IMS software problems. IMS address space and Task Control Block (TCB) structures along with associated IMS control block structures will be examined to provide you with a roadmap to manuever through the diagnostic maze. Focus will be given to using Interactive Problem Control System (IPCS) and the IMS Interactive Dump Formatter to become familiar with IMS dumps

### Wer sollte teilnehmen:

### **Zielgruppe**

#### **Audience**

IMS System Programmers responsible for supporting IMS and diagnosing IMS problems.

Voraussetzungen

### **Prerequisites**

Students should have moderate IMS knowledge which can be gained through work experience or through completing the IMS Fundamentals class (CM010 or CMW01). Students should also have basic assembly language knowledge and be familiar with reading hexadecimal values. A moderate level of z/os systems programming and z/os operations knowledge would be helpful.

## **Trainingsprogramm**

### **Course Outline**

- Review IMS documentation setup process
- IMS and z/os control block structure overview
- IPCS analysis overview

- IMS Wait analysis overview
- IMS abend analysis overview
- IMS dump analysis exercises

# **Objective**

- Learn IBM's recommendations for IMS diagnostic setup
- Understand the usage of the IMS Interactive Dump Formatter
- Identify the key z/os IPCS commands that are useful for IMS problem diagnostics
- Describe the methodology for debugging IMS ABENDs
- Describe the methodology for debugging IMS waits/loops

# Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 3. Mai 2023

3. Jul 2023 bis 5. Jul 2023

18. Sep 2023 bis 20. Sep 2023

11. Dez 2023 bis 13. Dez 2023



# IBM ES07G - z/OS JCL and Utilities

🙎 Live Online oder Präsenz

Dauer : 36h00 Nr. : 30294

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

## **Overview**

This course is designed to teach you how to use z/OS job control language (JCL) and selected z/OS utility programs in an online batch environment. Both Storage Management Subsystem (SMS) and non-SMS JCL are discussed. Machine lab exercises complement the lecture material.

## Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This basic course is intended for people who want to use z/OS JCL and utilities.

Voraussetzungen

# **Prerequisites**

You should have:

• Basic knowledge of IS technologies.

You should be familiar with:

• z/OS concepts and how these systems supports the Enterprise Servers.

This knowledge can be obtained by attending course An Introduction to the z/OS Environment (ES05G).

## **Trainingsprogramm**

## **Course Outline**

• Introduction to JCL

## **Objective**

- Code basic JCL statements using proper syntax and coding rules, including JCL for:
  - Creating new data sets
  - o Referencing existing data sets
  - Condition code testing
  - o IF/THEN/ELSE/ENDIF constructs
  - Generation data groups
  - Output routing
  - o JCL enhancements introduced by various releases of Multiple Virtual Storage (MVS), OS/390, and z/OS
- Identify Storage Management Subsystem requirements
- Code instream and cataloged procedures
- Use symbolic parameters in procedures
- Code procedure overrides and additions super
- Use selected utility programs
- Describe tape processing facilities
- Code sort and merge control statements and associated JCL statements
- Recognize and resolve common abnormal terminations (ABENDs)

## **Schulungsmethode**

# **Live Online Training**

24. Apr 2023 bis 28. Apr 2023

10. Jul 2023 bis 14. Jul 2023

25. Sep 2023 bis 29. Sep 2023

11. Dez 2023 bis 15. Dez 2023



# IBM ES10G - Fundamental System Skills in z/OS

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30078

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course is designed to teach you the fundamental practical skills to navigate and work in a z/OS environment.

This includes the use of ISPF/PDF dialogs, TSO/E commands, JCL, UNIX System Services shell, and BookManager.

### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This basic course is for IT personnel with a theoretical background of z/OS (for example, as taught in An Introduction to the z/OS Environment (ES05G) and some general practical IT experience.

#### Voraussetzungen

## **Prerequisites**

You should complete:

• An Introduction to the z/OS Environment (ES050) or equivalent on-the-job training

# Trainingsprogramm

## **Course Outline**

Unit 1: Introduction to the IBM Z Systems environment

Topic 1: Architecture in the z Systems environment

Topic 2: Operating systems

Topic 3: IBM z Systems

Unit 2: z/OS security

Topic 1: System security

Topic 2: RACF

Topic 3: RACF profiles

Unit 3: TSO ISPF panel

Topic 1: TSO familiarization

Exercise 1: System familiarization

Topic 2: Introduction to z/OS data set

Topic 3: Allocating data sets

Exercise 2: Allocate new data sets

Topic 4: Creating data sets and members

Topic 5: Edit data sets

Topic 6: Line commands

Topic 7: Copy, move, rename, and delete data sets and members

Exercise 3: ISPF editor primary commands

Exercise 4: ISPF editor Line commands

Exercise 5: Copy, move, rename, and delete data sets and members

Topic 8: Data set lists

Exercise 6: Data set lists

Unit 4: TSO commands

Topic 1: TSO ISPF commands

Topic 2: Edit data sets using line commands

Exercise 7: Using TSO/E commands

Unit 5: JES and JCL

Topic 1: Introduction to JES and JCL

Topic 2: Coding JCL

Topic 3: Submitting jobs using JCL

Topic 4: JCL utilities

Topic 5: Managing data sets using JCL)

Exercise 8: Submit a job

Exercise 9: JCL exercises

Exercise 10: Procedures

Unit 6: UNIX

Topic 1: UNIX system services

Topic 2: File systems

Topic 3: UNIX program support and security

Topic 4: Application services

Topic 5: Security

Exercise 11: ISHELL and hierarchical file system

## Objective

- Review the main concepts of z/OS
- Log on to TSO and start ISPF/PDF
- Navigate through ISPF/PDF dialogs and use the basic ISPF/PDF functions and the ISPF Editor
- Use ISPF/PDF to allocate data sets and edit data sets (including hierarchical file system (HFS) files) using the ISPF Editor primary and line commands
- Use ISPF to create and manipulate (copy, rename, delete, list, sort, and merge) data sets
- Identify security considerations for Multiple Virtual Storage (MVS) data sets and HFS files
- Describe and use TSO/E commands
- Perform simple modifications to existing ISPF/PDF panels
- Invoke a REXX exec and TSO CLIST
- Tailor existing JCL and submit batch jobs
- Review job status and job output using SDSF
- Invoke UNIX processes
- Manipulate HFS directories and file systems using the UNIX System
- Services ISHELL

## **Schulungsmethode**

# Live Online Training

10. Jul 2023 bis 14. Jul 2023

9. Okt 2023 bis 13. Okt 2023

27. Nov 2023 bis 1. Dez 2023



## IBM ES15G - z/OS Facilities

🙎 Live Online oder Präsenz

Dauer : 36h00 Nr. : 30106

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This classroom course introduces the base elements, optional features, and servers that are provided in z/OS. It focuses on the system service facilities that are provided by the z/OS Base Control Program (BCP). It teaches the students the functions of major software base elements in the management of jobs, tasks, storage, data, and problems. It also addresses how these functions can be affected by the system programmer.

Students are introduced to the services provided by the servers which execute in the z/OS environments, such as the Communications Server and the Security Server. Installation packaging options and steps to install the z/OS environments also are introduced.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This class is designed for persons who are new to the z/OS platforms but have a technical background in information technology. It is intended for those who require an in-depth understanding of z/OS.

#### Voraussetzungen

## **Prerequisites**

You should have a basic knowledge of IS technologies and also should be familiar with z/OS concepts and how these systems support the Enterprise servers. This knowledge can be obtained by attending *An Introduction to the z/OS Environment (ES050)*. Youdshould also have practical experience with logging on to TSO and working with JCL. This experience can be obtained by attending *z/OS Quick Start (ES10A)* 

### **Trainingsprogramm**

### **Course Outline**

#### Day 1

- Unit 1: z/OS overview
- Including welcome and course overview
- Unit 2: Storage management

#### Day 2

- Unit 3: Managing work
- Unit 4: Input/output processing

#### Day 3

- Unit 4: Input/output processing (continued)
- Unit 5: Data management
- Unit 6: Job management

#### Day 4

- Unit 7: IPL and system initialization
- Unit 8: Termination and recovery analysis
- Unit 9: Installing and configuring

#### Day 5

- Unit 10: Communicating
- Unit 11: Security in z/OS
- Including end-of-course summary

### Objective

- Describe the system initialization process of the z/OS operating systems
- State the differences between an address space, data space, and hyperspace
- Describe the process of translating a virtual address to a real address
- Explain the difference between paging and swapping
- Define a z/OS task
- Describe dispatching, interrupt processing, supervisor calls, cross memory services, and serialization
- Describe the purpose of the Job Entry Subsystem (JES)
- Illustrate the flow of a job through the z/OS environment
- Describe the allocation process for data sets in the z/OS environments
- Illustrate how an I/O request is processed in a z/OS environment
- Describe how workload management is accomplished in a z/OS environment
- Explain the z/OS recovery processes and list available Problem Determination Tools
- Describe z/OS storage management concepts
- Describe the UNIX System Services functions provided in the z/OS environments
- Explain the network topologies and protocol support provided in z/OS
- Describe system security and network security for a z/OS environment
- Create a high-level plan for the installation and configuration of a z/OS environment

### Schulungsmethode

# Live Online Training

29. Mai 2023 bis 2. Jun 2023

21. Aug 2023 bis 25. Aug 2023

4. Dez 2023 bis 8. Dez 2023



# IBM ES19G - Basics of z/OS RACF Administration

🙎 Live Online oder Präsenz

Dauer : 36h00 Nr. : 30221

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course begins with an introduction to the z/OS environment, TSO and ISPF/PDF, batch processing, and z/OS data sets. Hands-on labs allow you to gain experience with viewing and allocating data sets, submitting a batch job, and viewing job output. After the introduction to z/OS, you will then learn, through lecture and exercises, how to use basic RACF command parameters and panels to define users and groups, protect general resources, z/OS data sets, and choose a basic set of RACF options.

### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This basic course is for those who are new to z/OS and the RACF and responsible for security administration using the RACF element of the z/OS Security Server. Those who need to implement some of the more advanced features of the RACF might want to attend one or more of the following courses:

- Effective RACF Administration (BE87G)
- Implementing RACF Security for CICS (ES84G)
- Exploiting the Advanced Features of RACF (ES88G)

#### Voraussetzungen

## **Prerequisites**

You should have:

• Some familiarity with z/OS system facilities (beneficial).

Background material needed to proceed is presented the first day.

## **Trainingsprogramm**

## **Course Outline**

#### Day 1

- Welcome
- Unit 1: Review of z/Architecture and z/OS
- Unit 2: An introduction to ISPF and ISPF/PDF
- Exercise 1: Logging on to the lab system
- Unit 3: An introduction to z/OS data sets
- Exercise 2: Working with z/OS data sets
- Unit 4: Batch processing
- Exercise 3: Job submit and SDSF view Exercise review
- Unit 5: Security and RACF overview (part 1)

#### Day 2

- Unit 5: Security and RACF overview (part 2)
- Unit 6: Administering groups and users (section 6.1)
- Exercise 4 (including review): Defining an RACF group structure
- Unit 6: Administering groups and users (section 6.2)
- Exercise 5: User administration Exercise review

#### Day 3

- Unit 6: Administering groups and users (section 6.3)
- Exercise 6: Delegating security administration Exercise review
- Unit 7: Protecting z/OS data sets (to section 7.3)
- Exercise 7: Protecting z/OS data sets: Part 1 Exercise review

#### Day 4

- Unit 7: Protecting z/OS data sets (continued)
- Exercise 8: Protecting z/OS data sets: Part 2 Exercise review
- Unit 8: Introduction to general resources
- Exercise 9: Using RACF for TSO administration

#### Day 5

- Exercise review
- Unit 9: RACF options
- Unit 10: Other administrative facilities and features

## **Objective**

- List and describe the basic features and concepts of zSeries architecture and of the z/OS operating system as they relate to security administration
- Describe the allocation process for data sets in the z/OS environment
- Identify the security requirements of a system
- Use the basic facilities and features of RACF
- Define users to RACF
- Set up an RACF group structure

- Use RACF to protect resources
- Select a base set of options to tailor RACF

# Schulungsmethode

# **Live Online Training**

26. Jun 2023 bis 30. Jun 2023

21. Aug 2023 bis 25. Aug 2023

23. Okt 2023 bis 27. Okt 2023

6. Nov 2023 bis 10. Nov 2023



# IBM ES20G - z/OS System Services Structure

🙎 Live Online oder Präsenz

Dauer : 36h00 Nr. : 30407

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course presents the structure and control blocks of the z/OS BCP and system services. It prepares the new z/OS system programmer to identify potential bottlenecks and performance problems, perform initial error symptom gathering, and identify opportunities and requirements for tailoring a 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.

### Wer sollte teilnehmen:

### **Zielgruppe**

#### **Audience**

The primary audience for this intermediate course are z/OS system programmers who are new to z/OS installation, customization, measurement and tuning, or problem determination. Subsystem programmers will also benefit from this class.

#### Voraussetzungen

# **Prerequisites**

You should be able to:

- Describe the following z/OS BCP (MVS) characteristics:
  - o multiprocessing
  - multiprogramming
  - virtual storage and paging
  - o 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 a z/OS system
- Explain the role of the dispatcher, interrupts, SVCs, the program manager, and serialization in managing work in a

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.

Note: A fundamental knowledge of hexadecimal notation, assembler language, and z/Architecture instruction execution will enhance your understanding of the course material. Completion of Assembler Language Coding Workshop or Assembler Language Series is recommended.

### **Trainingsprogramm**

#### **Course Outline**

#### Day 1

- Welcome
- Unit 1 z/OS system introduction

#### Day 2

- Unit 2 Operating environment initialization
- Unit 3 Task management

#### Day 3

- Unit 4 Addressability
- Unit 5 Input/Output supervisor

#### Day 4

- Unit 6 Storage management
- Unit 7 Recovery termination manager

#### Day 5

• Unit 7 - Recovery termination manager (Continued)

### Objective

- Explain the MVS functions and control blocks necessary to support a task in a multitasking and multiprocessing
- 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 BCP 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.0.2 pref

# Schulungsmethode

# **Live Online Training**

19. Jun 2023 bis 23. Jun 2023

23. Okt 2023 bis 27. Okt 2023

4. Dez 2023 bis 8. Dez 2023



# IBM ES24G - IBM System z Hardware Management Console (HMC) Operations

A Live Online oder Präsenz

Dauer: 16h00 Nr.: 30269

Preis: 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course teaches you navigation, operation, and recovery techniques for the Hardware Management Console (HMC) in the System z environment. Through lecture and hands-on exercises, you learn setup and operating procedures for the HMC, gain in-depth problem determination skills, practice HMC operations, and utilize recovery capabilities provided by the System z servers.

# Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This intermediate course is for operations personnel and technical staff who are directly involved in the installation, operation, systems support, and software support of their System z mainframe environment.

#### Voraussetzungen

# **Prerequisites**

You should have an understanding of:

- Basic data processing and I/O concepts and terminology
- z/OS console operation, including display of device, job, and console status

# **Trainingsprogramm**

#### **Course Outline**

Day 1

- Welcome
- Unit 1: IBM mainframe server hardware: Overview
- Unit 2: Using the HMC classic style user interface
- Unit 3: Using the HMC tree style user interface
- Unit 4: Using the HMC to monitor System z servers
- Supporting labs

#### Day 2

- Review
- Unit 5: Activation profiles and operational tasks
- Unit 6: Single object operation: CPC session Supporting labs

# **Objective**

Identify the zEnterprise 196 and 114, System z10, System z9, and zSeries servers

Describe the major differences of the function and features between the System z servers

Describe and explain the concept of logical partitioning

Identify how various resources are assigned to LPARs during initialization

Describe the functions provided by the HMC and SE

• User interface styles, local and remote connectivity

Identify HMC home page to log on HMC application

Use the classic UI to:

- · Log on and log off
- · Open objects
- Navigate the HMC workplace using various selection techniques
- Exit a task on a window
- View the online books and use the Help functions
- Identify the different types of groups
  - CPC group, control hardware
  - Images group, control operating system
- Build new CPC and images groups
- Identify the contents of the Details window and determine object status
- Identify the various task lists

#### Use the tree UI to:

- Log on and log off
- Open objects
- Navigate the HMC workplace using various selection techniques
- Exit a task on a panel
- View the online books and use the Help functions
- Identify the different types of groups
  - CPC group, control hardware
  - o Images group, control operating system
- Build new CPC and images groups
- Identify the contents of the Details window and determine object status

• Identify the various task lists

Describe how exceptions are reported and presented on the HMC using the tree or classic UI

Use the HMC to determine the type and cause of the exception

Describe the three types of hardware messages that can surface on the HMC

Use the HMC to determine the cause of the hardware message

Retrieve the hardware messages from the log

Use the HMC Operating System Messages task to display and send messages to the operating system

Describe the functions that require the use of the access administrator ID

Use the HMC to perform access administrator related tasks

Describe the purpose, functions, and use of the different types of activation profiles

- Reset profile
- Image profile
- Group profile
- Load profile

Use the HMC to build new profiles, modify, view, or delete existing ones

Use the HMC to determine or change profile assignments Provide operational recommendations for HMC user settings

Use the HMC to perform

- A manual load operation
- A system reset
- Problem determination for a load failure

Invoke the system activity display and describe its purpose

Establish an HMC/SE session using the Single Object Operations task

Identify the difference between the HMC and SE workplace

Navigate using classic or tree UI to Identify CP, channel, and CHPID status for the physical CPC and all LPs

Identify the entry point for I/O and Channel Problem Determination panels

Log off from a CPC session

# Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 2. Mai 2023

15. Aug 2023 bis 16. Aug 2023

27. Nov 2023 bis 28. Nov 2023



# IBM ES26G - SMP/E for z/OS Workshop

🙎 Live Online oder Präsenz

Dauer : 36h00 Nr. : 30126

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course is designed to provide the SMP/E skills needed in the installation and maintenance of optional features and maintenance in the z/OS operating environment. You are taught to define the SMP/E database and invoke SMP/E to add, modify, or replace system elements. The course includes extensive hands-on labs using a current level of SMP/E.

You will get practical experience in the SMP/E tasks involved in installing a z/OS product. Emphasis is on interpreting results of SMP/E processing. SMP/E concepts examined in this course include modification control statements, the consolidated software inventory, zone structure, and error analysis. SMP/E commands such as RECEIVE, APPLY, ACCEPT, RESTORE, REPORT, and LIST are discussed.

You will also learn how to perform automated SMP/E delivery of z/OS and product maintenance over the Internet with an automated SMP/E process that downloads and installs IBM preventive and corrective service over the Internet.

# Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This basic course is for system programmers with no prior SMP experience who plan to use SMP/E for system and subsystem maintenance and installation.

Voraussetzungen

## **Prerequisites**

Required Skills and Knowledge

- Use basic JCL statements
- Describe the use of the following z/OS utility programs: assembler, linkage editor, IEBCOPY, IEBUPDTE, and AMASPZAP
- Identify the access method services commands and parameters used in creating a VSAM KSDS

• Use ISPF/PDF panels

This knowledge and these skills can be acquired on the job or by completing one or more of the following education offerings:

- Fundamental Practical System Skills in z/OS , (ES10) (ES10A)
- z/OS VSAM and Access Method Services, (SS83) (H3840)

The students new to z/OS could benefit from attending z/OS Facilities (ES15) (ES150) for additional basic z/OS knowledge.

### **Trainingsprogramm**

### **Course Outline**

Please refer to Course Overview for description information.

### **Objective**

- Describe how SMP/E is used as a tool for system maintenance
- Interpret modification control statements in a sample SYSMOD
- · Create a consolidated software inventory database to support installation and maintenance requirements
- Use the SMP/E dialogs to install a product and its related service
- Manage exception SYSMOD data
- Describe the use of the primary and secondary data sets required by SMP/E
- Analyze output from SMP/E processing and resolve commonly encountered problems
- Describe the use of the REPORT command to determine software dependencies between zones
- · Use the BUILDMCS process to create a function SYSMOD from an installed product and its service
- Use the new SMP/E functions to install software service automatically over the internet
  - Implement support for communication server FTP client
  - o Use the new RECEIVE ORDER command to order and install z/OS maintenance automatically over the Internet

# Schulungsmethode

# **Live Online Training**

22. Mai 2023 bis 26. Mai 2023

7. Aug 2023 bis 11. Aug 2023

9. Okt 2023 bis 13. Okt 2023

23. Okt 2023 bis 27. Okt 2023



# IBM ES27G - z/OS System Operators

🙎 Live Online oder Präsenz

Dauer: 24h00 Nr.: 30338

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

To provide an overview of the z Operating System (OS), look at the systems from both a hardware and software prospective, and develop a basic understanding of System z partitioning capabilities, Processor Resource/Systems Manager (PR/SM), z/OS, Job Entry Subsystem 2 (JES2), Job Entry Subsystem 3 (JES3), Time Sharing Option (TSO), TSO Extended (TSO/E), System Display and Search Facility (SDSF), z/OS Communications Server, and System z channel subsystem usage for various channels, such as Enterprise System Connection (ESCON), Fiber Connector (FICON), and the Open Systems Adapter (OSA). It will also describe the Initial Program Loader (IPL) process and enable you to become comfortable issuing z/OS commands from a Multi Console Support (MCS) system console or extended MCS console.

### Wer sollte teilnehmen:

# Zielgruppe

#### **Audience**

This basic course is for IT personnel with little or no theoretical background of z/OS and little or no general practical in IS experience.

Voraussetzungen

# **Prerequisites**

You should have completed:

• An Introduction to the z/OS Environment (ES050)

# **Trainingsprogramm**

### **Course Outline**

Day 1

- Welcome
- Unit 1: Review of System z servers and z/OS
- Unit 2: z/OS MVS commands
- Labs 1, 2, and 3

#### Day 2

- Review
- Unit 3: JES and TSO
- Unit 4: z/OS data sets
- Labs 4, 5, and 6

#### Day 3

- Review
- Unit 5: z/OS consoles operation
- Labs 7, 8, and 9

## **Objective**

- Describe System z usage of z/Architecture
- Identify System z servers and their major components
- Name z/OS functional groups and base elements
- Describe the concept of virtual storage and its exploitation in z/OS
- Issue z/OS commands with the correct syntax
- Identify z/OS display commands that can be used to determine device and channel path status
- Describe the use of VARY and CONFIG z/OS operator commands
- Interpret the results of z/OS commands
- Identify the differences between JES2 and JES3
- Describe JES2 usage
- SPOOLs and checkpoint data sets
- Cold, warm, and hot starts
- Commands to control resources and display job status
- Describe the purpose and use of the following:
- TSO
- ISP/PDF
- Allocating, displaying, and editing data set information with ISP/PDF panels
- SDSF
- Describe the naming rules for z/OS data sets
- Describe the z/OS catalog structure
- Describe the functions performed by DFSMS, DFSMSdss, DFSMShsm, and DFSMSrmm to help manage the data sets in a data center
- Describe the function of JCL cataloged procedures
- Identify the difference between MCS consoles and extended MCS consoles
- Issue commands to determine the status and parameters of any console
- Describe major console enhancements at z/OS 1.8, z/OS 1.10, and z/OS 2.1

### Schulungsmethode

# **Live Online Training**

5. Jun 2023 bis 7. Jun 2023

12. Jun 2023 bis 14. Jun 2023

13. Nov 2023 bis 15. Nov 2023



# IBM ES28G - z/OS JES2 Operator Training

🙎 Live Online oder Präsenz

Dauer : 20h00 Nr. : 30051

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course is designed to give the z/OS Operator personnel as well as entry systems programmers an overview about JES2. The students should be able to use JES2 commands at the z/OS Console and use SDSF.

# Wer sollte teilnehmen:

### **Zielgruppe**

### **Audience**

This intermediate course is for z/OS Operators (console and periphery), help desk, and support personnel.

#### Voraussetzungen

# **Prerequisites**

You should have completed:

- z/OS Basic System Skill (ES10)
- z/OS System Operations (ES27)

# **Trainingsprogramm**

### **Course Outline**

Day 1

- Welcome
- Unit 1 z/OS and JES2 overview
- Unit 1 SDSF demo
- Unit 2 Manage a JES2 subsystem

• Exercise 1 - Start a z/OS system

#### Day 2

- Review day 1
- Exercise 1 Start a z/OS system (continued)
- Exercise 2 Log on to TSO
- Unit 3 Control JES2
- Exercise 3 JES2 commands
- Unit 4 Checkpoint, Spool offload, printer server, NJE, RJE, and MAS

#### Day 3

- Review day 2
- Unit 4 Checkpoint, Spool offload, printer server, NJE, RJE, and MAS (continued)
- Exercise 4 Spool and checkpoint management
- Exercise 5 System display and search facility
- Exercise 6 Automatic Command Facility (optional)

# **Objective**

- Understand the z/OS environment and JES2 role
- Start JES2 with focus on options and shutdown
- Control JES2 with commands and SDSF
- Control JES2 job flow, selection, and processing
- Control output processing and printers
- Understand z/OS influence on JES2 processing

# Schulungsmethode

# **Live Online Training**

22. Mai 2023 bis 24. Mai 2023 24. Jul 2023 bis 26. Jul 2023 21. Aug 2023 bis 23. Aug 2023

20. Nov 2023 bis 22. Nov 2023 4. Dez 2023 bis 6. Dez 2023



# IBM ES34G - Assembler Language Coding Workshop

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30102

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This classroom hands-on lab course provides an introduction to the mainframe Assembler language. The course is designed to develop the skills appropriate to write and/or maintain programs and routines written in S/370 or S/390 Assembler Language. Emphasis is placed on enhancing skills in problem resolution through program check interruption analysis and dump reading.

# Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This intermediate course is for application programmers and/or beginning system programmers who code, maintain and/or debug application support programs or subroutines written in S/370 or S/390 Assembler Language.

### Voraussetzungen

### **Prerequisites**

This classroom hands-on lab course provides an introduction to the mainframe Assembler language. The course is designed to develop the skills appropriate to write and/or maintain programs and routines written in S/370 or S/390 Assembler Language. Emphasis is placed on enhancing skills in problem resolution through program check interruption analysis and dump reading.

# **Trainingsprogramm**

### **Course Outline**

Day 1

Welcome

- Unit 1 Numbering systems
- Unit 2 Mainframe architecture
- Unit 3 Assembler syntax
- Overview of instructions: LA, LR, LTR, MVC, DS, DC
- Exercise 1 80/80 listing
- Exercise 1A 80/80 listing

#### Day 2

- Exercise 1 review
- Unit 4 Data definition statements
- Unit 5 Fixed-point binary instructions
- Exercise 2 Binary data

#### Day 3

- Exercise 2 review
- Unit 6 Addressing, comparing, and branching
- Unit 7 Data movement instructions
- Exercise 3 Text handling

#### Day 4

- Exercise 3 review
- Unit 8 Assembler pseudo instructions
- Unit 9 Reading dumps
- Unit 10 Packed decimal processing
- Exercise 4 Packed data/editing

#### Day 5

- Exercise 4 review
- Unit 11 Miscellaneous instructions
- Course wrap-up

#### Objective

- Recognize architectural features, such as instruction formats, data representation, storage addressing, and so on, which are significant to program analysis
- Identify point of program interruption, using the formatted system dump and elements of information such as the Program Status Word (PSW), the Instruction Length Code (ILC), the program's base register(s), and so on
- Identify appropriate standards for assembler programs in terms of program organization, register conventions, coding practices, documentation, and so on
- Code and debug assembler language programs which:
- Conform to standard linkage conventions using save area chaining
- Define and use various types of data definitions, including fixed point binary, character, hexadecimal, and packed decimal
- Employ standard macros such as CALL, SAVE, RETURN
- Use various Assembler Language statements such as CSECT, EQU, COPY, END
- Use both symbolic and explicit notational forms for instructions
- · Use data literals appropriately, and explain the use of LTORG to direct positioning of the literal pool
- Create and use appropriate patterns for EDIT instructions

# Schulungsmethode

# **Live Online Training**

24. Apr 2023 bis 28. Apr 2023

24. Jul 2023 bis 28. Jul 2023

7. Aug 2023 bis 11. Aug 2023

11. Dez 2023 bis 15. Dez 2023



# IBM ES35G - Advanced Assembler Language Coding Workshop

🙎 Live Online oder Präsenz

Dauer: 32h00 Nr.: 30293

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course provides instruction and practice in the use of the more complex S/390 Assembler Language facilities for the experienced assembler language programmer. The course includes a discussion of standard linkage conventions, use of BSAM/QSAM and selected system macros, the macro definition language, and reentrant coding considerations.

Emphasis is placed on enhancing skills in problem resolution through analysis of more complex system-provided dumps.

### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This course is designed for application programmers and beginning system programmers who code, maintain, and debug application support programs or subroutines written in S/390 assembler language.

# Voraussetzungen

# **Prerequisites**

You should be able to:

• Code and debug simple S/390 assembler language programs

# **Trainingsprogramm**

### **Course Outline**

Day 1

• (00:15) Welcome

- (01:00) Unit 1: Review
- (00:15) Unit 2: Assembler instructions
- (01:45) Unit 3: Linkage
- (01:30) Unit 4: LE date/time handling
- (02:30) Exercise 1: PARM handling and search

#### Day 2

- (00:15) Lab review
- (03:00) Unit 5: Access methods: BSAM/QSAM
- (03:00) Exercise 2: File handling

#### Day 3

- (00:15) Lab review
- (00:30) Unit 6: Assembler compile-time options
- (00:30) Unit 7: SNAP dumps
- (03:30) Unit 8: Macros and the Conditional Assembly Language
- (02:30) Exercise 3: Macro modification

#### Day 4

- (00:25) Lab review
- (01:15) Unit 9: Miscellaneous instructions
- (00:25) Unit 10: Floating point data
- (00:25) Unit 11: Reentrant coding
- (00:15) Class wrap-up

# **Objective**

- Identify data management considerations and access methods
- Code assembler language programs which:
  - o Conform to standard linkage conventions using save area chaining
  - o Define and use BSAM/QSAM datasets through standard I/O macros
- Define and execute user macros which contain:
  - Positional and/or keyword parameters
  - o Fixed or variable entry parameter lists
  - Conditional assembly logic
- Use variable length storage operations (that is, EX, MVCL, and so on)
- Employ more complex instructions (that is, TR, TRT, BXLE, and so on)
- Access JCL parameter data
- Employ LE date/time handling services
- Identify reentrant coding considerations and dynamic storage acquisition

# **Schulungsmethode**

# **Live Online Training**

22. Mai 2023 bis 25. Mai 2023

Garantietermin

11. Dez 2023 bis 14. Dez 2023

31. Jul 2023 bis 3. Aug 2023

21. Nov 2023 bis 24. Nov 2023

Online Anmeldung:



# IBM ES40G - z/OS System Programmer Fundamentals

Live Online oder Präsenz

Dauer : 32h00 Nr. : 30365

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **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.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

### **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.

#### Voraussetzungen

# **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

# **Trainingsprogramm**

# **Course Outline**

#### Day 1

- Welcome
- Unit 1 What makes up a z/OS system?
- Exercise 1- Introduction to z/OS setup
- Unit 2 System boot: POR and IPL
- Exercise 2 Complete the IPL: Start JES, start networking
- Unit 3 Processing user work with z/OS
- Exercise 3 LOGON into TSO and create a new user profile

#### Day 2

- Unit 4 Networking, z/OS communication server
- Exercise 4 Data administration
- Unit 5 What else is needed for end user access to the system?
- Exercise 5 Automate startup and monitor the system

#### Day 3

- Unit 6 Data management
- Exercise 6 System logger
- Unit 7 A closer look at IPL: IPLPARM, SYS1.PARMLIB, SYS1.PROCLIB
- Exercise 7- Define a string of DASD and ACTIVATE dynamically

#### Day 4

- Unit 8 System management: WLM, SMF, RMF, and system logger
- Exercise 8 Install and maintain a user function
- Unit 9 Hardware configuration definition
- Unit 10 Software maintenance: SMP/E
- Unit 11 Change management: ServerPac and other IBM services

#### Objective

- Describe the basics of z/OS architecture
- Identify basic components of a z/OS system
- Discuss what you have learned about LPARs
- Describe maintenance principles
- Identify and list the POR process
- · Describe the IPL process
- Identify the basic address spaces
- Describe how to shut down z/OS
- Implement a basic JES2 batch environment
  - o Identify how work can be started in z/OS and it's relationship to the job entry subsystem
  - 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
  - o 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 two key members used for TCAS startup
- Name the components of ISPF
- Describe the general layout of ISPF/PDF panels
- Describe how UNIX System Services are used in z/OS
- Describe briefly the UNIX Shell and utilities and how they are accessed
- Describe the application services provided in UNIX System Services
- Describe how security is handled in UNIX System Services
- Describe the classical z/OS data management
  - o DASD init: VTOC, VTOC index
  - o ICF catalog creation: BCS, VVDS
  - MCAT/UCAT
  - IDCAMS utility
  - o DFSMS: DFSMSdss, DFSMShsm
  - Data, storage, and management classes
- · Define the hierarchical data management
  - o HFS file system
  - o zFS file system
- Define load-parameters for IPL
- Define symbols for use in system initialization
- Define a configuration for system initialization
- Define a library for procedures
- 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:
  - o Sysplex configuration and CF logstreams
  - o 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 the batch and ISPF interfaces to SMP/E
- Install a user function using RECEIVE, APPLY, and ACCEPT
- Explain how to remove a SYSMOD with RESTORE
- Describe the installation options available to install z/OS
- Use the attributes of z/OS elements and features to identify the contents of a z/OS product
- Describe the contents of the ServerPac offering and important install documentation sources
- List the main steps in the ServerPac build process
- Describe hardware and software prerequisites for performing a ServerPac installation in:
  - o The driving system
  - $\circ \ \, \text{The target system}$

# Schulungsmethode

# **Live Online Training**

24. Apr 2023 bis 28. Apr 2023 1. Mai 2023 bis 5. Mai 2023 12. Jun 2023 bis 16. Jun 2023



# **IBM ES42G - Parallel Sysplex Implementation Workshop**

A Live Online oder Präsenz

Dauer: 36h00 Nr.: 30246

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course is developed for systems programmers working on an implementation of a Parallel Sysplex. It covers the details of z/OS and z/OS-related products and subsystems exploiting the Parallel Sysplex components. It is focused on the resource sharing side.

# Wer sollte teilnehmen:

#### Zielgruppe

### **Audience**

This intermediate course should include system and subsystem programmers and personnel responsible for the implementation of the hardware and software for a Parallel Sysplex.

#### Voraussetzungen

# **Prerequisites**

Experience in the following areas is recommended:

- Installing and testing z/OS and related products
- HCD coding
- PARMLIB settings

### **Trainingsprogramm**

### **Course Outline**

Day 1

Welcome

• Unit 1: Sysplex: Overview and definitions Lab 2: Building two stand-alone systems

#### Day 2

- Unit 2: Base sysplex definitions and commands
- Unit 3: Hardware Management Console Lab 3: Building a two system base sysplex

#### Day 3

- Unit 4: Base sysplex migration to Parallel Sysplex
- Unit 5: Coupling Facility architecture
- Lab 4: Base to Parallel Sysplex migration dynamically Lab 5: Dynamically add a third CF to sysplex

#### Day 4

• Lab 6: Implementation of CF exploiters

#### Day 5

- Unit 6: Sysplex operation and recovery
- Lab recovery

# **Objective**

- Understand the steps to implement a basic and full Parallel Sysplex
- Implement a basic sysplex
- Implement a multisystem base sysplex
- Implement the connectivity for a Parallel Sysplex
- Implement the features and functions of a Parallel Sysplex
- Implement the coupling facility key exploiters
- Understand the different recovery scenarios

# Schulungsmethode

# **Live Online Training**

3. Apr 2023 bis 7. Apr 2023



# IBM ES52G - z/OS REXX Programming Workshop

🙎 Live Online oder Präsenz

Dauer: 36h00 Nr.: 30001

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course is designed to teach you the basic skills required to write programs using the REXX language in z/OS. The course covers the TSO extensions to REXX and interaction with other environments such as the MVS console, running REXX in batch jobs, and compiling REXX.

# Wer sollte teilnehmen:

#### Zielgruppe

### **Audience**

This is an intermediate course for people who need to write and maintain Rexx programs in the z/OS system environment.

# Voraussetzungen

# **Prerequisites**

You should be able to:

- Code basic Job Control Language statements
- Code in a programming language
- Create, alter, and delete data sets using TSO

These skills can be developed by taking:

- Fundamental System Skills of z/OS (ES10)
- A programming language course

# **Trainingsprogramm**

### **Course Outline**

#### Day 1

- (01:00) Unit 1 Introduction
- (01:30) Unit 2 Getting started with REXX (start)
- (01:00) Lab exercise 1
- (01:00) Unit 2 Getting started with REXX (finish)
- (01:00) Lab exercise 2
- (01:30) Unit 3 Programming in REXX (start)

#### Day 2

- (01:00) Lab exercise 3
- (01:30) Unit 3 Programming in REXX (finish)
- (01:00) Lab exercise 4
- (01:00) Unit 4 Functions and subroutines (start)
- (02:00) Lab exercise 5

#### Day 3

- (01:00) Unit 4 Functions and subroutines (finish)
- (01:00) Lab exercise 6
- (01:30) Unit 5 Debugging and error handling
- (01:00) Lab exercise 7
- (01:00) Unit 6 Executing host commands
- (01:30) Lab exercise 8

#### Day 4

- (01:30) Unit 7 Compound variables and the data stack
- (01:30) Lab exercise 9
- (01:30) Unit 8 Reading and writing data sets in REXX
- (01:00) Lab exercise 10
- (01:30) Unit 9 The parse instruction

#### Day 5

- (01:30) Lab exercise 11
- (01:30) Unit 10 Using REXX: REXX compiler, REXX in batch, MVS console commands
- (01:00) Lab exercise 12

# **Objective**

- Write programs using the Rexx language
- Use various data parsing techniques
- Use built-in Rexx functions
- Create user-defined internal and external functions and subroutines
- Issue host commands from within Rexx execs
- Code programs that read and write data sets
- Use instructions and commands that manipulate the data stack
- Use Rexx debugging tools
- Write error-handling routines

# Schulungsmethode

# **Live Online Training**

8. Mai 2023 bis 12. Mai 2023

24. Jul 2023 bis 28. Jul 2023

11. Sep 2023 bis 15. Sep 2023

6. Nov 2023 bis 10. Nov 2023



# IBM ES54G - Basic z/OS Tuning Using the Workload Manager

🙎 Live Online oder Präsenz

Dauer : 36h00 Nr. : 30172

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Do you need to know how to establish a practical performance management program for your z/OS system? This course is designed for new performance analysts to learn to work with the Workload Manager (WLM) in goal mode. Learn concepts of WLM and performance management in the z/OS system using the WLM.

Learn how to analyze Resource Monitoring Facility (RMF) reports and implement service definitions using the WLM Interactive System Productivity Facility (ISPF) application. The course uses z/OS hands-on lab exercises to reinforce the concepts and techniques discussed in lecture.

Hands-on labs

This course includes hands-on lab exercises. Each student team, working on their own z/OS system, will configure RMF, analyze RMF reports to find bottlenecks, and utilize the WLM dialogs to create goals and classification rules in a service definition that manages a supplied z/OS workload.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This is an intermediate course for z/OS system programmers, z/OS performance analysts, and z/OS performance administrators new to performance management for their z/OS system.

Note: ES54 is intended for individuals new to WLM and the z/OS performance area

#### Voraussetzungen

#### **Prerequisites**

You should:

Understand basic MVS and z/OS operation, such as job flow through JES, job scheduling paging, swapping,

dispatching controls, and I/O scheduling

- · Have a basic knowledge of the purpose of the Workload Manager's function in managing system workloads
- Be familiar with using TSO and ISPF to manage data sets and run batch jobs

#### **Trainingsprogramm**

#### **Course Outline**

#### Day 1

- Welcome
- Unit 1 Tuning methodology
- Unit 2 Using SMF and RMF to monitor performance
- Lab 1 Introduction to your system
- Lab 2 Using RMF Monitor I and Monitor II

#### Day 2

- Unit 3 Performance impacts when running in a shared LPAR environment
- Unit 4 Basic system workload management (part 1)
- Lab 3 Implementing a WLM environment on z/OS (part 1)

#### Day 3

- Unit 4 Basic system workload management (part 2)
- Lab 3 Implementing a WLM environment on z/OS (part 2)

#### Day 4

- Unit 5 WLM commands, internals, and service
- Lab 4 Using RMF Monitor III to solve performance problems

#### Day 5

- Unit 6 z/OS DASD performance topics
- Unit 7 Tuning processor storage
- Unit 8 Miscellaneous performance topics
- Lab 5 z/OSMF and performance management

#### **Objective**

- Describe a performance and tuning methodology
- Develop a systematic z/OS performance and tuning plan
- Describe the factors which could affect the performance of an z/OS system
- Use the WLM ISPF application
- Describe the components of a service definition
- Define workloads and service levels and classification rules
- State which z/OS commands affect WLM operation
- Identify the major WLM services for z/OS, including enclaves and application environments, and how they are used by DB2, WebSphere, and CICS
- Analyze CPU performance when running in a shared LPAR environment
- Utilize and monitor zIIP and zAAP specialty engines
- Measure and tune z/OS DASD, processor storage, and coupling facility configurations
- Explain the functions and facilities of RMF and SMF

- Analyze performance bottlenecks using RMF
- Use Workload License Charges (WLC), defined capacity and soft capping to manage software costs
- Describe advanced z/OS environments that utilize Intelligent Resource Director (IRD), HiperDispatch, z/OSMF Workload Management, and I/O Priority Manager
- Use the z/OSMF Workload Management (WLM) task
  - Use Performance Monitoring with z/OSMF
  - o Modify a WLM service definition to meet the requirements for monitoring a specific system workload
  - o Create and customize Monitoring Desktops
  - o Review any issues by using the Monitoring Desktops options displays
  - $\circ\,$  Assess the performance of the workloads running on the z/OS

## Schulungsmethode

# **Live Online Training**

17. Apr 2023 bis 21. Apr 2023

8. Mai 2023 bis 12. Mai 2023

Garantietermin

21. Aug 2023 bis 25. Aug 2023

27. Nov 2023 bis 1. Dez 2023



# IBM ES66G - Advanced z/OS Security: Crypto, Network, RACF, and Your Enterprise

Live Online oder Präsenz

Dauer: 28h00 Nr.: 30152

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

System z continues to extend the value of the mainframe by leveraging robust security solutions, to help meet the needs of today's on demand, service-oriented infrastructures. System z servers have implemented leading-edge technologies, such as high-performance cryptography, multi-level security, large-scale digital certificate authority and lifecycle management; as well as improved Secure Sockets Layer (SSL) performance, advanced Resource Access Control Facility (RACF) function, and z/OS Intrusion Detection Services. This advanced z/OS security course presents the evolution of the current z/OS security architecture. It explores in detail, the various technologies that are involved in z/OS Cryptographic Services, z/OS Resource Access Control Facility (RACF), and z/OS Integrated Security Services.

In the hands-on exercises, you begin with your own z/OS HTTP Server in a TCP/IP environment. Throughout the exercises, you make changes to the configuration to implement authentication by using RACF, SSL and the use of digital certificates. Use is made of facilities such as RACDCERT to manage digital certificates, PKI Services and RACF auto registration. You will also implement different scenarios to implement ssl security for a typical tcpip application; FTP: SSL, TLS, server authentication, client certificates and AT-TLS. These exercises reinforce the concepts and technologies being covered in the lectures.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This class is intended for z/OS system programmers and security specialists in charge of designing and implementing z/OS security for web-enabled applications.

Voraussetzungen

#### **Prerequisites**

You should have:

- General z/OS knowledge, including basic UNIX System Services skills
- Experience configuring any of the web servers on z/OS
- Basic knowledge of TCP/IP and RACF

#### **Trainingsprogramm**

#### **Course Outline**

#### Day 1

- Welcome
- Unit 1: Overview of z/OS security for on-demand business Unit 2: z/OS platform security: Part 1
- Unit 3: z/OS platform security: Part 2
- Unit 4: Introduction to digital certificates and PKI

#### Day 2

- Unit 5: The SSL protocol
- Unit 6: HTTP and Apache server, SSL client authentication and WebSphere Application Server security
- Unit 7: RACF and digital certificates
- Unit 8: Open Cryptographic Services Facility
- Exercise 1: Controlling access using the httpd.config file Exercise 2: SSL protocol

#### Day 3

- Exercise 2: SSL protocol (continued)
- Unit 9: Introduction to z/OS Communications Server security features Unit 10: System SSL overview
- Unit 11: TN3270 secure connection
- Unit 12: FTP server and client secure connection
- Unit 13: Cryptography overview: System z integrated cryptography

#### Day 4

- Exercise 3: SSL client authentication and RACF auto registration
- Unit 14: Network authentication services and Enterprise Identity Mapping Unit 15: LDAP Directory Services in z/OS and the Tivoli Director Server for z/OS
- Unit 16: An introduction to OpenSSH for z/OS
- Exercise 4: Securing FTP with SSL: FTPS, TLS, AT-TLS

#### **Objective**

- Describe the components of network security, platform security, and transaction security on z/OS
- Describe how RACF supports UNIX users and groups
- Describe web server security flow on z/OS
- Explain the contents and use of a digital certificate
- Explain the difference between asymmetric and symmetric cryptographic techniques
- Explain SSL V3 client authentication
- Explain the basics of WebSphere Application Server and web services security
- Utilize the RACDCERT command
- Discuss the OCSF service providers
- Explain VPN (IPSec), SSL/TSL, and AT-TLS and the differences between them
- Discuss the z/OS Communication Server policy agent, IDS, and IP filtering
- Describe and utilize System SSL

- Explain how TN3270 and FTP SSL support works
- Explain how IBM secure hardware cryptographic co-processors work
- Explain how Kerberos authentication works
- Explain the LDAP terms of DN, objectclass, attribute, schema, back end, and directory
- Explain how to setup, customize, and operate z/OS PKI Services

# Schulungsmethode

# **Live Online Training**

6. Jun 2023 bis 9. Jun 2023

22. Aug 2023 bis 25. Aug 2023

25. Sep 2023 bis 28. Sep 2023

11. Dez 2023 bis 14. Dez 2023



# IBM ES73G - IBM System z Parallel Sysplex Operations

🙎 Live Online oder Präsenz

Dauer : 24h00 Nr. : 30409

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course is designed so that students can learn how z/OS systems operate in a Parallel Sysplex environment through discussion topics and hands-on lab exercises. Students learn problem determination skills, practice enhanced sysplex operations, including management of the coupling facility (CF), and use recovery capabilities provided by the System z servers.

The course consists of six units and 12 hands-on lab exercises.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

The audience includes operations personnel and technical staff who are directly involved in the installation, operation, systems support, and software support of their Parallel Sysplex environment.

#### Voraussetzungen

# **Prerequisites**

You should have an understanding of:

- Basic data processing and I/O concepts and terminology
- z/OS console operation, including display of device, job, and console status

#### **Trainingsprogramm**

#### **Course Outline**

Day 1

- Welcome
- Unit 1: Sysplex overview
- Unit 2: Coupling facility
- Supporting labs

#### Day 2

- Review
- Unit 3: Sysplex operation and recovery
- Supporting labs

#### Day 3

- · Review and labs
- Unit 4: Sysplex Failure Manager
- Unit 5: Server Time Protocol operation
- Unit 6: z/OS IPL flow
- Supporting labs

## Objective

- Describe common sysplex terminology, concepts, and benefits provided by a Parallel Sysplex configuration
- Identify the basic hardware and software components that make up the Parallel Sysplex environment and how they are used
- Use z/OS MVS commands to identify XCF signaling and sysplex shared couple data set usage and to determine current operational status
- Describe CF operation; how and when the CFCC is loaded on a System z LPAR, the various CF link definitions and how they can be used
- Identify CF structure types, definition and allocation process, and how they are used in the CF
- Use z/OS MVS commands to display structure status
- Use CF operator commands to display and change the operational status of a CF
- Describe and demonstrate recommended procedures and typical z/OS MVS commands to manage sysplex members, coupling facilities, structure rebuilds, and couple data sets
- Identify potential problems during system removal, CF structure or CDS usage, and determine appropriate operator action
- Explain the differences and benefits of having stand-alone CF and internal CF configurations
- Describe the purpose and use of Sysplex Failure Manager and how SFM can be used to address sympathy sickness
- Explain why time synchronization is important and how server time protocol is used
- Describe console usage and mode of operation for a system and a sysplex
- · Describe the IPL sequence and identify where and when sysplex activation is done during IPL
- Identify key areas with the IPL, explaining potential problems and how to avoid them

#### Schulungsmethode

# **Live Online Training**

26. Jun 2023 bis 28. Jun 2023

9. Aug 2023 bis 11. Aug 2023

28. Aug 2023 bis 30. Aug 2023

29. Nov 2023 bis 1. Dez 2023



# IBM ES82G - IBM Z: Technical Overview of HW and SW Mainframe Evolution

Live Online oder Präsenz

Dauer: 16h00 Nr.: 30242

Preis: 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course is designed to provide an understanding of today's complex system mainframe environment on the zEnterprise System and System z servers. It is mainly targeted for operators technical support, system programmers, and any others who need to keep current in this mainframe environment. Through lecture and hands-on exercises, you learn how the hardware and operating systems interact.

This course addresses the following topics:

- Mainframes and distributed server comparisons: Why so many servers?
- Mainframe directions: Past, current, and future
- Mainframes: System z introduction and relative performance comparisons
- IBM System z hardware design: Frames, CEC cage, books, models, and MSUs
- System z Capacity on Demand
- Physical/Logical partitioning, server initialization, and CHPIDs
- I/O configuration and HCD overview
- MVS to z/OS software overview
- z/OS Parallel Sysplex
- z/OS enhancements on the zPlatform
- z/Architecture overview and virtual addressing concepts
- System concepts: The big picture
- HMC introduction, groups, and activation profiles
- · Determining object status and error conditions
- · Activation and operating system interface

#### Wer sollte teilnehmen:

#### Zielgruppe

#### **Audience**

The basic class should consist of lead operators, technical support personnel, system programmers, or anyone in the technical field who requires an understanding of how the current hardware and software interact in the large

#### Voraussetzungen

#### **Prerequisites**

You should have an understanding of:

- Basic data processing concepts
- I/O concepts

#### **Trainingsprogramm**

#### **Course Outline**

#### Day 1

- Welcome
- Introduction and course overview
- Unit 1: Mainframe directions and System z servers
- Unit 2: Server hardware and I/O configuration (part 1)

#### Day 2

- Review
- Unit 2: Server hardware and I/O configuration (part 2)
- Unit 3: MVS to z/OS overview and processor concepts
- Unit 4: Hardware Management Console basics
- Supporting labs:
  - o Exercise 1: Remote access set up
  - o Exercise 2 HMC web browser and UI set up
  - o Exercise 3: HMC familiarization and lab system activation
  - Exercise 4: Hardware Management Console fundamentals (optional)

#### **Objective**

Describe and categorize the various servers that are commonly found in data centers

Identify and describe workloads that are commonly used on mainframes and distributed servers

Describe a typical data center with multiple server platforms:

- Why so many servers
- Current concerns and considerations
- Potential future actions

Identify when the first IBM general purpose mainframe was introduced

Describe several key IT and mainframe strategies introduced in the 2000s

Identify current and future data center trends

Describe why smarter systems are required to meet future requirements

Introduce the zEnterprise System and describe how it can apply to current and future business requirements

Describe the basic functions, characteristics, and terminology of System z servers

Identify the number of CPs and specialty processors available to various System z servers

List relative performance of recent System z servers as compared to previous servers

Identify and list IBM mainframe servers supporting multiple channel subsystems and z/Architecture

Identify key components of the zEnterprise System and their purpose

Describe and compare various System z components:

- Frame layout and cage usage
- · Server models, books, memory, and cache structure
- Performance and millions of service units (MSUs)

Describe and compare I/O infrastructure and processor usage across zEC12 to z10 mainframes

- I/O cages, drawers, and technology used
- PU, cache, and book fan-out connectivity

Describe how and what System z physical components are used when processing instructions and performing an I/O operation

Identify System z Capacity on Demand (CoD) options available for planned and unplanned outages

Describe the CoD provisioning architecture and which servers can use it

Describe how logical partitioning is used, resource assignments and initialization activities

Describe mainframe channels, usage, and CHPID assignments

Describe the purpose and use of HCD

Identify mainframe operating systems and their supported mainframe servers:

- Describe how the mainframe OS evolved from the System 360 servers to the current models
- List some of the major enhancements provided by the recent z/OS versions and to what servers they apply
- List z/OS coexistence and release support strategy
- Describe the various queues that are used to dispatch work

Describe the difference between a base and Parallel Sysplex

- List Parallel Sysplex main characteristics
- Describe the purpose and use of the coupling facility
- Identify the difference between the following sysplex configurations
  - MULTISYSTEM, MONOPLEX, and XCFLOCAL

Identify and describe the major enhancements provided by the System z software and hardware platform:

- 64-bit architecture, IRD, HiperSockets, MLCSS, MIDAW
- Multiple subchannel sets, zHPF, CPM, HiperDispatch, zDAC
- TEF, RI, DAT2, Flash Express, zAware, and autonomic computing

Identify processor architectural modes and their supported addressing implementations:

• Bimodal, trimodal, address spaces, virtual addressing, and storage usage

Describe the various queues that are used to dispatch work

Use system commands to display active address spaces and identify their current status

Describe the high level interaction between z/OS, CSS and I/O devices during I/O processing

Describe the role of the HMC and SE for System z servers

Identify and change the HMC user interface style

Identify CPC and image objects usage on the HMC

Build and customize user-defined groups

Identify profile types, usage and assign profiles to objects

Use the Details window to determine object status and assignments

Describe how and why unacceptable status conditions and hardware messages are presented to the HMC

Identify the HMC activation process for CPCs and images

Send messages to the operating system

#### Schulungsmethode

# **Live Online Training**

29. Mai 2023 bis 30. Mai 2023



# IBM ES89G - IBM Z: Technical Overview of HW and SW Mainframe Evolution

Live Online oder Präsenz

Dauer: 12h00 Nr.: 30070

Preis : 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course is designed to provide an understanding of today's complex system mainframe environment on the IBM z Systems. It is mainly targeted for operators, technical support, system programmers, and any others who need to keep current in this mainframe environment. Through lecture you learn how the hardware and operating systems interact.

#### Wer sollte teilnehmen:

#### Zielgruppe

#### **Audience**

The class should consist of lead operators, technical support personnel, system programmers, or anyone in the technical field who requires an understanding of how the current hardware and software interact in the large mainframe environment.

z/Architecture and z/OS overview and concepts is an optional unit depending on the student audience. It is the instructor's decision to either present the material in the unit or explain to the students that the unit contains detailed z/Architecture information and might not be applicable to the student's job role and responsibilities.

#### Voraussetzungen

#### **Prerequisites**

You should have an understanding of:

- Basic data processing concepts
- I/O concepts

#### **Trainingsprogramm**

#### **Course Outline**

Day 1

(00:30) Welcome

(00:30) Introduction and course overview

(02:00) Unit 1: Mainframe directions and z Systems (04:00) Unit 2: Server hardware and I/O configuration

Day 2

(02:00) Unit 3: MVS to z/OS overview and processor concepts

(01:30) Unit 4: Hardware Management Console basics

(02:00) Unit 5 (Optional): z/Architecture and z/OS overview and concepts

#### **Objective**

• Describe the evolution of the data center, categorize the various server platforms, and servers that are commonly found there and their workloads

Identify past, current, and future data center trends

Describe the basic functions, characteristics, and terminology of z Systems servers

Identify and list the various z Systems servers and hardware models, from zSeries server to the

latest z14 and z14 ZR1 servers

Identify the number of CPs and specialty processors available to various z Systems Identify and describe key components of z Systems and compare various z Systems

components

- Frame layout, drawer, and cage usage
- Server models, processor drawers, books, memory, and cache structure
- Performance and millions of service units (MSUs)

Describe and compare I/O infrastructure and processor usage across z14 to zEC12 mainframes

- I/O drawers, cages, and technology used
- PU, cache, and fan-out connectivity

Describe how and what z Systems physical components are used when processing instructions and performing an I/O operation

Identify z Systems Capacity on Demand (CoD) options available for planned and unplanned outages

Describe how logical partitioning is used, resource assignments, channel and CHPID types, assignments and initialization activities

Describe the purpose and use of HCD

Use the HMC to control basic operational tasks and monitor z Systems servers

Identify and describe mainframe operating systems and their supported mainframe servers

Describe the difference between a base and Parallel Sysplex

Identify and describe the major enhancements provided by the recent z Systems software and hardware platform

The following are optional objectives in the z/Architecture and z/OS overview and concepts unit:

- Explain basic z/Architecture terminology and concepts for Real and virtual storage Address spaces, data spaces, and hiperspaces
- Identify processor architectural modes and their supported addressing implementations
- Define what is z/OS
- Name the server solutions included in z/OS
- Identify the characteristics of a base and Parallel Sysplex
- Identify current CFs and connectivity options
- Describe the purpose and use of the coupling facility

# Schulungsmethode

# **Live Online Training**

29. Mai 2023 bis 30. Mai 2023



# IBM ES90G - Advanced Parallel Sysplex Operations and Recovery Workshop

Live Online oder Präsenz

Dauer: 36h00 Nr.: 30232

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course describes advanced operator actions to implement new policies, coupling facilities, structures and sysplex related operational enhancements. It diagnoses problems and demonstrates recovery techniques in these areas. These include:

- Identifying HMC problems and recovery, including IPL problems during system and sysplex activation
- Recovery with and without SFM policies
- Couple data set failures
- CF and CF structure failures

Labs are provided to submit jobs to format CDS, define policies, start and verify that they are working as desired, identify any policy change pending conditions and correct as needed. Labs take students through the required steps to implement ECS, GRS star, JES checkpoint, Operlog, Logrec, and SM duplexing on the CF. Students will also identify potential problems during the implementation process, identify various CDS and other sysplex related problems. Students will remove a CF from the sysplex as in the case of required maintenance to a CF; add a new CF to the sysplex and perform system and CF failure and recovery scenarios.

If you are enrolling in a Self Paced Virtual Classroom or Web Based Training course, before you enroll, please review the Self-Paced Virtual Classes and Web-Based Training Classes on our Terms and Conditions page, as well as the system requirements, to ensure that your system meets the minimum requirements for this course.

/terms

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This course is for operations personnel, tech support staff, and system programmers who are directly involved in the operation, system support, and software support of their Parallel Sysplex environment.

#### **Prerequisites**

You should have:

- experience with the HMC and the Parallel Sysplex environment
- attended some previous sysplex class. Any one of the following Parallel Sysplex courses will provide the needed skill: *Parallel Sysplex Implementation Workshop (ES42G)* or *(ES73G)*.

#### **Trainingsprogramm**

#### **Course Outline**

#### Day 1

- Welcome.
- Unit 1: Parallel Sysplex overview Exercise 1: Setup for remote lab access
- Exercise 2: HMC 2.n.n navigation hints and tips: Classic and tree UI (optional)
- Exercise 3: Groups and profiles for sysplex activation Exercise 4: MCS console setup through OSA ICC Exercise 5: Using commands to determine sysplex status

#### Day 2

- Unit 2: Sysplex initialization, CDS usage, and recovery
- Exercise 5: Using commands to determine sysplex status (continued) Exercise 6: ECS and dynamic GRS STAR activation
- Exercise 7: JES2 reconfiguration
- Exercise 8: CDS mismatch during plex activation

#### Day 3

- Unit 3: Managing CFs, structures, policies, and recovery
- Exercise 9: Logger
- Exercise 10: CFRM change pending conditions and recovery options for FP connections
- Exercise 11: VTAM and ISTGENERIC demo Exercise 12: Managing coupling facilities

#### Day 4

- Unit 4: Dynamic CF implementation, SFM, and ARM
- Exercise 12: Managing coupling facilities (continued) Exercise 13: Add new CF and manage reset profile Exercise 14: Implementing SM duplexing
- Exercise 15: Sysplex failure management
- Exercise 16: SFM storage reconfiguration (optional)

#### Day 5

- Machine lab optional exercises 17 and 18
- Unit 5: STP, DB2, and structure recovery and removal overview

#### Objective

• Use HMC classic or tree UI, create HMC groups, load profiles, and

- provide tips and recommendations for HMC use
- · Initialize sysplex system images and identify problems reported via system consoles and the HMC
- Identify sysplex components, define resource and data sharing differences in relation to recovery options, discuss various configurations and system duplexing
- Perform related display commands to identify sysplex status and recovery actions for IPL problems during system activation
- Manage couple data sets, format CDS, define policies, and start and verify they are working as desired
- Implement configurations supporting GRS STAR, JES checkpoint, and ECS using structures in the CF
- Identify couple data set failures, CF and CF structure failures
- Identify policy change pending conditions and correct as necessary
- Remove a CF from the sysplex as in the case of required maintenance to a CF
- Identify and correct problems during structure rebuild process such as insufficient storage in the CF
- Add a new System z CF to the sysplex dynamically using a sysplex wide dynamic activation with Hardware Configuration Definition (HCD) facility
- Perform recovery procedures with and without SFM policies
- Define Server Time Protocol implementation, terminology, and supporting
- configurations

#### **Schulungsmethode**

# **Live Online Training**

19. Jun 2023 bis 23. Jun 2023

17. Jul 2023 bis 21. Jul 2023

14. Aug 2023 bis 17. Aug 2023

4. Dez 2023 bis 7. Dez 2023



# IBM ES96G - Hardware Configuration and Definition (HCD) for z/OS

🙎 Live Online oder Präsenz

Dauer : 32h00 Nr. : 30188

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn to work with the Hardware Configuration Definition (HCD) function for z/OS, and to plan and initiate dynamic reconfiguration of your zSeries hardware environment. Learn to use the HCD dialogs of z/OS to create an Input/Output (I/O) configuration and dynamically alter the I/O configuration. Learn about the creation of an I/O Configuration Dataset (IOCDS) and various reports that HCD can build. Use a z/OS system to reinforce lecture topics and to practice working with the HCD dialogs. Hands-on lab projects may be done in teams depending on the number of attendees and location.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This course is for people who are responsible for maintaining the I/O configuration contained in the input/output data files (IODFs) and input/output configuration data sets (IOCDs) at their z/OS installation.

#### Voraussetzungen

#### **Prerequisites**

You should have:

• A basic knowledge of z/OS and I/O configuration

This knowledge can be developed on the job, or by taking Fundamental System Skills in z/OS (ES10A).

#### **Trainingsprogramm**

#### **Course Outline**

Day 1

- Welcome
- Unit 1: HCD introduction
- Unit 2: IOCP and MVSCP macro review
- Unit 3: HCD dialog
- Unit 4: LPAR and logical control unit concepts
- Unit 5: OSAs, OSA/ICC and HiperSockets
- Unit 6: Review of zSeries hardware
- Exercise 1: Overview of lab environment
- Exercise 2: HCD familiarity

#### Day 2

- Unit 7: zSeries I/O architecture: Logical channel subsystems
- Unit 8: Advanced DASD concepts: EAV/PAV and multiple subchannel sets
- Unit 9: FICON, FICON CTCs, and FICON directors
- Exercise 3: Coding a zSeries 2817
- Exercise 4: Adding FICON directors to your configuration (optional)
- Exercise 5: Incremental migration from IOCP deck (optional)

#### Day 3

- Unit 10: HCD implementation and migration
- Unit 11: IPL and LOADxx member
- Unit 12: Dynamic I/O reconfiguration
- Unit 13: z196 HCD and using CMT
- Exercise 6: Building a LOADxx member
- Exercise 7: Perform dynamic I/O

#### Day 4

- Unit 14: FICON CTCs for sysplex
- Unit 15: HCD and Parallel Sysplex
- Exercise 8: Coding a 2817 using the CMT
- Exercise 9: Coding CF coupling links
- Exercise 10: Coding sysplex FICON CTCs

#### Objective

- Describe new zSeries processor technology
- Code new zSeries processors (z9 to z196)
- Code FICON channels and FICON CTCs
- Code Coupling Facilities (CF) and CF links
- Code cascaded FICON Directors
- Create an IODF work file on a z processor from scratch
- Use CHPID mapping tool to create a validated work IODF
- Use work IODF and create a production IODF
- Perform Dynamic I/O changes on a real z/OS system
- Build a LOADxx parmlib member for initial program load (IPL)
- View configuration graphically
- · Create appropriate configuration reports

#### **Schulungsmethode**

# **Live Online Training**

24. Apr 2023 bis 27. Apr 2023

3. Jul 2023 bis 6. Jul 2023

23. Okt 2023 bis 26. Okt 2023

4. Dez 2023 bis 7. Dez 2023



### IBM ESB3G - z/OS Management Facility Implementation and Use R Live Online oder Präsenz

Dauer : 24h00 Nr. : 30405

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course is designed to provide you with the skills required to install and customize IBM z/OS Management Facility (z/OSMF) 2.3, and use the functions and features provided by z/OSMF.

IBM z/OS Management Facility (z/OSMF) is a product for z/OS that will simplify, optimize, and modernize the z/OS system programmer experience.

z/OSMF delivers solutions in a task-oriented, web browser-based user interface with integrated user assistance.

In this course, we introduce z/OS Management Facility and its architecture; and describe the components that are necessary to run z/OSMF on z/OS.

In this course, you will also learn the installation and customization of z/OS Management Facility, and will customize several system components to exploit the following z/OSMF functions:

- z/OSMF Software Management Manager
- Capacity Provisioning
- Classic (ISPF) Interface
- Incident Log
- Configuration Assistant for the z/OS Communications Server
- Workload Management
- System Status, Resource Monitoring
- Workflow

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This intermediate course is intended for experienced system programmers and subsystem administrators responsible for installing and implementing z/OSMF in their enterprise.

The students must have basic knowledge of z/OS UNIX System Services (USS), and the skills normally required to

install a z/OS product using SMP/E and batch jobs to update system data sets.

RACF knowledge is useful, as well as WebSphere 8.5 Liberty profile for z/OS.

#### Voraussetzungen

#### **Prerequisites**

You should have a good knowledge of z/OS at the level of a z/OS system programmer, acquired on the job or through the z/OS curriculum, including skills required to install and customize z/OS UNIX applications.

If the above prerequisites are not met, then the courses listed in the Curriculum are recommended.

#### **Trainingsprogramm**

#### **Course Outline**

#### Day 1

- Welcome
- Unit 1: z/OS Management Facility: Overview
- Unit 2: z/OS Management Facility: Implementation and configuration
- Exercise 1: z/OSMF planning and prerequisites

#### Day 2

- Exercise 1:z/OSMF planning and prerequisites (continued)
- Exercise 2: z/OS Management Facility configuration and setup
- Unit 3: z/OS Management Facility: Usage
- Exercise 3: z/OS Management Facility post-configuration and administration

#### Day 3

- Unit 3: z/OS Management Facility: Usage (continued)
- Exercise 4: z/OS Management Facility exploitation
- Wrap-up

#### Objective

- Describe the purpose and benefit of z/OS Management Facility
- Describe the functions provided by z/OS Management Facility
- Describe the technical overview of z/OSMF features and architecture
- Describe the z/OSMF client and server operating environment
- Describe the systems management tasks and updates with every release
- Indicate list of publications and references
- Describe ordering and installing the z/OSMF software (code)
  - Using ServerPac or SMP/E
- Describe setup and configuration overall process:
  - Configure z/OS prerequisites for plug-ins
  - Configure z/OSMF
- Explain any migration issues or concerns
- Describe the details of each function, updated for each release ofz/OSMF

- Understand the detailed examples of how to use the z/OSMF features
- Describe the z/OSMF tasks (and release of z/OS and z/OSMF that was introduced)
- Manage the z/OSMF Administration:
  - $\circ\,$  Adding users, defining roles, new SAF-based authorization
  - o Customize Welcome screen, add Links

# Schulungsmethode

# Live Online Training

3. Apr 2023 bis 5. Apr 2023

23. Aug 2023 bis 25. Aug 2023

11. Dez 2023 bis 13. Dez 2023



### IBM ESC9G - IBM z/OS 2.4 Update

Live Online oder Präsenz

Dauer : 24h00 Nr. : 30227

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course is designed to teach students the new features and enhanced functions provided in z/OS Version 2 Release 4. The software updates and enhancements for z/OS V2R4 are presented in groups based on closely associated z/OS components. The groups include enhancements to the base control program, sysplex features, UNIX System Services, the data storage subsystem, Communications Server, and security components, such as RACF.Finally, the installation and migration issues relating to installation of z/OS V2.4 are discussed.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This course is intended for system programmers and subsystem administrators responsible for installing and implementing z/OS V2.4 in their enterprise.

#### Voraussetzungen

#### **Prerequisites**

Knowledge of z/OS at the level of a z/OS system programmer, acquired on the job or through the z/OS curriculum. Warning: This class only covers changes packaged in z/OS V2.4 and expects students to be familiar with the contents of the z/OS V2R3 and previous system upgrades.

#### **Trainingsprogramm**

#### **Course Outline**

List the main enhancements in z/OS V2R4

Describe and implement, where necessary, the other enhancements packaged with z/OS V2.4 including: The BCP includes the I/O configuration program (IOCP), the Workload Manager (WLM), System Management Facilities

(SMF), HCD/HCM, the program management binder, Language Environment, Global resource serialization, z/OS sysplex, cross-system coupling facility (XCF), Coupling Facility Resource Manager (CFRM), SFM, system Logger) and other components like BCPii, z/OS Resource Measurement Facility (RMF) and z/OS Job Entry Subsystem 2 (JES2), JES3, SDSF, z/OS Interactive System Productivity Facility (ISPF), time-sharing option (TSO), REXX. z/OS Management Facility (zOSMF).

The USS kernel, USS shell, and related file system services.

Data storage management which includes Extended Address Volumes, DFSMSdfp, DFSMSdss, and DFSMShsm. Communications Server which includes features of the TCP/IP address space, general IP, and SNA modernization. System security - RACF.

z/OS Management Facility (zOSMF).

z/OS Container Extensions

Plan for and install the z/OS V2.4 system.

### Objective

- List the main enhancements in z/OS V2R4
- Describe and implement, where necessary, the other enhancements packaged with z/OS V2.4 including:
- The BCP includes the I/O configuration program (IOCP), the Workload Manager (WLM), System Management
  Facilities (SMF), HCD/HCM, the program management binder, Language Environment, Global resource
  serialization, z/OS sysplex, cross-system coupling facility (XCF), Coupling Facility Resource Manager (CFRM), SFM,
  system Logger) and other components like BCPii, z/OS Resource Measurement Facility (RMF) and z/OS Job Entry
  Subsystem 2 (JES2), JES3, SDSF, z/OS Interactive System Productivity Facility (ISPF), time-sharing option (TSO),
  REXX.
- z/OS Management Facility (zOSMF).
- The USS kernel, USS shell, and related file system services.
- Data storage management which includes Extended Address Volumes, DFSMSdfp, DFSMSdss, and DFSMShsm.
- Communications Server which includes features of the TCP/IP address space, general IP, and SNA modernization.
- System security RACF.
- z/OS Management Facility (zOSMF).
- z/OS Container Extensions
- Plan for and install the z/OS V2.4 system.

#### Schulungsmethode

# **Live Online Training**

22. Mai 2023 bis 24. Mai 2023

4. Sep 2023 bis 6. Sep 2023

4. Dez 2023 bis 6. Dez 2023



# IBM ESZOG - IBM z/OS Bootcamp

🙎 Live Online oder Präsenz

Dauer: 80h00 Nr.: 30358

Preis: 8.000,00 € netto 9.520,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course is designed to give new hire IT professionals an introduction into the IBM Z environment. The IBM mainframe servers, operating systems and software products will be discussed. Through lecture and hands-on labs, this course will provide the basic skill set to jump start productivity for technical professionals who are new to the mainframe environment. The skills taught in this course can be applied across multiple mainframe job roles. This course consists of 16 lecture units and 11 lab exercises.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This basic class is intended for the technical professional that is new to the mainframe environment.

#### Voraussetzungen

#### **Prerequisites**

You should have an understanding of:

- Basic data processing concepts
- I/O concepts

#### **Trainingsprogramm**

#### **Course Outline**

- Mainframes and distributed server comparisons: Why so many servers?
- Mainframe directions: Past, current, and future
- Mainframes: System z introduction and relative performance comparisons

- IBM System z hardware design: Frames, CEC cage, books, models and MSUs
- I/O Infrastructure and processor usage: zEC12 to z10 comparisons
- System z Capacity on Demand
- Physical/Logical partitioning, server initialization, and CHPIDs
- I/O configuration and HCD overview
- MVS to z/OS software overview
- z/OS Parallel Sysplex
- z/OS enhancements on the zPlatform
- z/Architecture overview and virtual addressing concepts
- System concepts: The big picture
- HMC introduction, groups, and activation profiles
- Determining object status and error conditions
- Activation and operating system interface
- z/OS base elements and optional features
- z/OS system programming
- z/OS system libraries
- Data center components and trends
- TSO/E and ISPF/PDF
- Data sets and accessing with ISPF/PDF
- ISPF/PDF editor
- Copy/Move/Rename/Delete
- Data Set List
- TSO/E commands and TSO/E programming
- Introduction to JES and JCL
- JOB, EXEC, and DD statements
- DD parameters
- Traditional applications
- Programming languages
- Object technology
- System-level-security
- Network-level security
- Transaction-level security
- Directory services
- z/OSMF
- SDSF
- Working with UNIX System Services
- Introduction to utilities and conditional execution
- Data management, organization, and format
- Generation data groups
- Procedures
- More about utilities
- More on procedures
- Selected JCL topics
- SORT and MERGE
- ABENDs

#### **Objective**

- Describe and categorize the various servers that are commonly found in data centers
- · Identify and describe workloads that are commonly used on mainframes and distributed servers
- Describe a typical data center with multiple server platforms:
  - Why so many servers

- Current concerns and considerations
- Potential future actions
- Identify when the first IBM general purpose mainframe was introduced
- Describe several key IT and mainframe strategies introduced in the 2000s
- Identify current and future data center trends
- Describe why smarter systems are required to meet future requirements
- Introduce the zEnterprise System and describe how it can apply to current and future business requirements
- Describe the basic functions, characteristics, and terminology of System z servers
- Identify and list the various System z servers and hardware models, from zSeries server to the latest zEnterprise EC12
- Identify the number of CPs and specialty processors available to various System z servers
- List relative performance of recent System z servers as compared to previous servers
- Identify and list IBM mainframe servers supporting multiple channel subsystems and z/Architecture
- Identify key components of the zEnterprise System and their purpose
- Describe and compare various System z components:
  - Frame layout and cage usage
  - o Server models, books, memory, and cache structure
  - Performance and millions of service units (MSUs)
- · Describe and compare I/O infrastructure and processor usage across zEC12 to z10 mainframes
- I/O cages, drawers and technology used
- PU, cache, and book fan-out connectivity
- Describe how and what System z physical components are used when processing instructions and performing an I/O operation
- Identify System z Capacity on Demand (CoD) options available for planned and unplanned outages
- Describe the CoD provisioning architecture and which servers can use it
- Describe how logical partitioning is used, resource assignments, and initialization activities
- Describe mainframe channels, usage, and CHPID assignments
- Describe the purpose and use of HCD
- Identify mainframe operating systems and their supported mainframe servers
- Describe how the mainframe OS evolved from the System 360 servers to the current zEC12 server
- List some of the major enhancements provided by the recent z/OS versions and to what servers they apply
- List z/OS coexistence and release support strategy
- Describe the various queues that are used to dispatch work
- Describe the difference between a base and Parallel Sysplex
- List Parallel Sysplex main characteristics
- Describe the purpose and use of the coupling facility
- Identify the difference between the following sysplex configurations
  - MULTISYSTEM, MONOPLEX, and XCFLOCAL
- Identify and describe the major enhancements provided by the System z software and hardware platform:
  - o 64-bit architecture, IRD, HiperSockets, MLCSS, MIDAW
  - o Multiple subchannel sets, zHPF, CPM, HiperDispatch, zDAC
  - o TEF, RI, DAT2, Flash Express, zAware, and autonomic computing
- Identify processor architectural modes and their supported addressing implementations:
  - $\circ~$  Bimodal, trimodal, address spaces, virtual addressing, and storage usage
- Describe the various queues that are used to dispatch work
- Use system commands to display active address spaces and identify their current status
- Describe the high level interaction between z/OS, CSS, and I/O devices during I/O processing
- Describe the role of the HMC and SE for System z servers
- Identify and change the HMC user interface style
- Identify CPC and image objects usage on the HMC
- Build and customize user-defined groups
- Identify profile types, usage, and assign profiles to objects

- Use the Details window to determine object status and assignments
- Describe how and why unacceptable status conditions and hardware messages are presented to the HMC
- Identify the HMC activation process for CPCs and images
- · Send messages to the operating system
- List program management services that z/OS provides
- List main elements and optional features of the z/OS system
- Describe the responsibilities of a z/OS system programmer
- Explain system libraries, their use, and methods for managing their content
- List main components of a data center and recent improvements being made to data centers
- List attributes of TSO/E
- Know how to log on to TSO/E
- Recognize a ready prompt
- Describe what ISPF is
- Recognize the ISPF/PDF primary option menu
- Enter ISPF and navigate through ISPF/PDF panels
- Name the three data set types
- Describe the attributes of data set names
- Use the ISPF/PDF panels to allocate, edit, move, copy, and rename data sets
- Use line and prefix commands while editing data sets
- Describe the general layout of a TSO command
- Issue some of the more common TSO commands
- Describe the attributes of a CLIST and a REXX exec
- Explain how a CLIST differs from a REXX exec
- Describe the responsibilities of JES
- Describe the need for job control language (JCL)
- Define the JOB, EXEC, and DD statements
- Differentiate between single and multistep jobs
- Explain JCL errors, return codes, and ABENDs
- Describe the JCL statement format
- Code JOB statements and JOB statement parameters
- Code EXEC statements to invoke a program and pass PARM parameters to the program
- Introduce the DD statement and a few of its parameters
- Discuss the COMMENT statement
- Create a new data set
- Reference an existing uncataloged data set
- Reference an existing cataloged data set
- Code and discuss the DISP parameter
- Use special DD statements
- Detect and correct JCL syntax and usage errors
- Describe the use of traditional DB/DC applications like CICS, IMS, and DB2 on z/OS
- Describe the purpose of the Language Environment
- Describe the support provided for object-oriented application development on z/OS
- Discuss z/OS security architecture
- · Describe the components of network security, transaction security, and platform security on z/OS
- Explain the differences between authorization and authentication
- Identify some firewall technologies within the security server
- Describe the Lightweight Directory Access Protocol (LDAP)
- Describe the purpose and benefit of z/OS Management Facility
- Describe the functions provided z/OS Management Facility
- List SDSF commands used to display jobs, active users, and tasks
- Know how to filter SDSF output based on DEST, PREFIX, OWNER and SYSNAME
- Know how to enter JES and MVS commands through SDSF and use ULOG to view commands and their output

- Describe the main features of UNIX System Services (USS) in z/OS
- Describe briefly the UNIX shell and utilities
- Describe the hierarchical file system (HFS)
- Describe the application services provided in USS
- Describe how to start and manage a process in USS
- Describe how security is handled in USS
- Identify the different types of utility programs
- Establish the rules for coding utility control statements
- Describe the functions of system and data set utility programs
- Review the JCL and utility control statements appropriate for:
  - IEBGENER
  - o IEBPTPCH
  - o IEHLIST
  - o IDCAMS
- Use the DFSMS/dfp Utilities Manual for reference
- Discuss the COND parameter and conditional execution of job steps
- Examine the record formats supported by z/OS
- Compare blocked and unblocked data sets
- Discuss system-determined block size
- Introduce the SMS-managed data sets
- Describe the data set organizations supported by z/OS
- Differentiate between PDS and PDSE data sets
- Discuss VSAM data set creation through JCL
- Describe a procedure
- Differentiate between a cataloged procedure and in-stream procedure
- Describe procedure modifications through overriding, adding, or nullifying parameters
- Use symbolic parameters to modify procedures
- Compare the PROC and EXEC statements for supplying symbolic parameters

continue to the Remarks...

# **Schulungsmethode**

# **Live Online Training**

1. Mai 2023 bis 12. Mai 2023

17. Jul 2023 bis 28. Jul 2023

4. Dez 2023 bis 15. Dez 2023



# IBM H005G - IBM Spectrum Scale Basic Administration for Linux and AIX R Live Online oder Präsenz

Dauer: 24h00 Nr.: 30169

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket : Auf Anfrage

## **Overview**

This course is intended for IT professionals tasked with administering an IBM Spectrum Scale storage cluster in environments running Linux and AIX nodes. The course includes information on installing, configuring, and monitoring an IBM Spectrum Scale cluster. Many Spectrum Scale features are described in lecture materials and then implemented in lab exercises. These features include: Storage management, high availability options, cluster management, and information lifecycle management (ILM) tools.

Note: Although the lab environment is running the Linux operating system, the differences in Spectrum Scale compared with an AIX environment are minor. Therefore, the skills acquired during the course can be applied in both Linux and AIX environments.

# Wer sollte teilnehmen:

#### **Zielgruppe**

# **Audience**

This lecture and exercise-based course is for individuals who want to understand how to install, configure, and manage an IBM Spectrum Scale storage cluster.

#### Voraussetzungen

# **Prerequisites**

The student is expected to have a good understanding of UNIX/Linux, SAN, and Storage concepts.

# **Trainingsprogramm**

## **Course Outline**

#### Day 1

- Welcome and course overview
- Unit 1 IBM Spectrum Scale overview
- Exercise 1 Cluster node preparation
- Unit 2 Installation and cluster configuration

#### Day 2

- Exercise 2 Installation and cluster configuration
- Unit 3 Cluster management
- Exercise 3 Cluster management and configuration

#### Day 3

- Unit 4 Information Lifecycle Management (ILM)
- Exercise 4 Storage pools, filesets, and policies
- Unit 5 High availability and cluster data backups
- Exercise 5 Replication and snapshots
- Course wrap-up and evaluation

# **Objective**

After completing this course, you should be able to:

Summarize the key features of IBM Spectrum Scale
Describe IBM ESS and Spectrum Scale RAID
Install IBM Spectrum Scale and configure a cluster
Manage a cluster
Implement information lifecycle management (ILM)
Configure IBM Spectrum Scale high availability features
Back up critical cluster data

# Schulungsmethode

# **Live Online Training**

24. Apr 2023 bis 26. Apr 2023

29. Mai 2023 bis 31. Mai 2023

14. Aug 2023 bis 16. Aug 2023



# IBM H006G - IBM Spectrum Scale Advanced Administration for Linux R Live Online oder Präsenz

Dauer : 24h00 Nr. : 30133

Preis : 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

## **Overview**

The course includes information on the Spectrum Scale installer toolkit, installer GUI, cluster upgrade scenarios, cluster health monitoring, cluster performance data collection and monitoring, management GUI, file system encryption, cluster security, and call home features. Many of the features are described in lecture materials and implemented in lab exercises.

# Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This lecture and exercise-based course is for individuals who want to expand their knowledge of Spectrum Scale advanced installation and management capabilities.

#### Voraussetzungen

# **Prerequisites**

You should have taken:

• IBM Spectrum Scale Basic Administration for Linux (H005G)

# **Trainingsprogramm**

# **Course Outline**

Migrating to IBM Spectrum Scale 5.0

Spectrum Scale 5.0 GUI

Multi-cluster

Clustered NFS

Cluster Export Services for multi-protocol support

SMB Protocol Support

NFS Support in CES; Ganesha overview/performance

Active File Management

AFM-Based Disaster Recovery (DR) and Asynchronous DR

Planning LTFS and GPFS environment for data archiving

File Placement Optimizer

IBM GPFS-FPO and integration with GPFS Hadoop connector

IBM Spectrum Scale Call Home

Monitoring and performance tuning

Flash Cache metadata migration

# **Objective**

After completing this course, you should be able to:

Use advanced installer tools to install Spectrum Scale

Upgrade a cluster to a newer level of Spectrum Scale

Monitor cluster health

Configure cluster performance data collection

Monitor cluster performance

Configure cluster security options

Encrypt file system data

Configure the Spectrum Scale call home feature

# Schulungsmethode

# **Live Online Training**

31. Mai 2023 bis 2. Jun 2023

16. Aug 2023 bis 18. Aug 2023



# IBM H008G - IBM Spectrum Scale - Remote Data Access

Live Online oder Präsenz

Dauer : 24h00 Nr. : 30322

Preis : 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Enterprises and organizations are creating, analyzing and keeping more data than ever before. An organization's underlying storage must support new-era big data and artificial intelligence workloads along with traditional applications while ensuring security, reliability and high performance. IBM Spectrum Scale meets these challenges as a high-performance solution for managing data at scale. This new course covers IBM Spectrum Scale features that enable data-anywhere access that spans storage and locations to accelerate applications across the data center or around the world. Attendees should already know the basics of installing, configuring and managing a Spectrum Scale clustered file system and how to use the installer toolkit.

This course is intended for IT professionals tasked with administering a Spectrum Scale storage cluster consisting of Linux nodes. The course includes information on various Spectrum Scale features that enable remote access to the data that is stored in a cluster file system. This includes: multi-cluster support, clustered NFS, cluster export services (CES) and protocol support (NFS, SMB, Object, and block), Active File Management (AFM), and AFM-based Asynchronous Disaster Recovery (AFM DR). The features are described in lecture materials and implemented in lab exercises.

# Wer sollte teilnehmen:

# **Zielgruppe**

#### **Audience**

This lecture and exercise-based course is for individuals who want to configure a Spectrum Scale cluster to allow remote data access.

#### Voraussetzungen

# **Prerequisites**

Students must already know the basics of installing, configuring and managing a Spectrum Scale clustered file system. This prerequisite can be met by attending the following courses:

H005G - IBM Spectrum Scale Basic Administration for Linux and AIX

H006G - IBM Spectrum Scale Advanced Administration for Linux

# **Trainingsprogramm**

# **Course Outline**

- Welcome and course introduction
- Unit 1: Spectrum Scale multi-cluster support
- Exercise 1: Configuring multi-cluster file system access
- Unit 2: Active File Management (AFM)
- Exercise 2: Configuring Active File Management (AFM)
- Unit 3: AFM-based Asynchronous Disaster Recovery (AFM DR)

# Objective

Configure a cluster to allow remote file system access

Mount a Spectrum Scale file system from a remote cluster

Implement Active File Management (AFM)

Summarize AFM cache modes

Describe AFM DR

Differentiate AFM and AFM DR

Implement AFM DR

Describe and implement Clustered NFS (CNFS)

Describe the Cluster Export Services (CES) architecture

Implement CES protocols (NFS, SMB, Object, and block)

Differentiate CNFS and CES NFS

# Schulungsmethode

# **Live Online Training**

30. Aug 2023 bis 1. Sep 2023



# **IBM LX010G - Linux Basics**

🙎 Live Online oder Präsenz

Dauer: 24h00 Nr.: 30083

Preis : 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

# **Overview**

This course is designed to teach the basics of the Linux environment. Class activities include accessing a system, navigating the directory hierarchy, using the vi editor, using common commands, tools, and scripting concepts.

# Wer sollte teilnehmen:

# Zielgruppe

## **Audience**

This course requires no experience with Linux or Power systems. General knowledge of computers is expected, though no intermediate or advanced skills are required.

Voraussetzungen

# **Prerequisites**

Students attending this course are expected to have a basic understanding of an IT environment.

# **Trainingsprogramm**

# **Course Outline**

Unit 1: Getting started with Linux

Exercise 1: Using the system

Unit 2: The vi editor

Exercise 2: The vi editor

Unit 3: Files and directories

Exercise 3: Files and directories

Unit 4: Using files

Exercise 4: Using files

Unit 5: File permissions

Exercise 5: File permissions

Unit 6: Shell basics

Exercise 6: Shell basics

Unit 7: Using shell variables

Exercise 7: Using shell variables

Unit 8: Processes

Exercise 8: Processes

Unit 9: Customizing the user environment

Exercise 9: Customizing the user environment

Unit 10: Linux utilities

Exercise 10: Linux utilities

# **Objective**

On Completion of this course, the student should be able to:

- Log in to an Linux system and set a user password
- Use Linux online documentation
- Use the vi editor
- Manage Linux files and directories
- Describe the purpose of the shell
- Execute common Linux commands and manage Linux processes
- Customize the working environment
- Use common Linux utilities
- Write simple shell scripts

# Schulungsmethode

# **Live Online Training**

31. Mai 2023 bis 2. Jun 2023

29. Nov 2023 bis 1. Dez 2023



# IBM LX063G - Preparing for Red Hat OpenShift: Implementing Containers on IBM Power Systems

Live Online oder Präsenz

Dauer: 16h00 Nr.: 30428

Preis : 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

## **Overview**

This 2 day course is designed to provide skills enablement for system administrators and product support specialists in the area of operating system based virtualization provided by Linux containers. Topics include introduction to Podman, Buildah, Docker, Kubernetes and CRI-O. Hands-on exercises reinforce the lecture material, allowing students to install and configure Linux containers.

## Wer sollte teilnehmen:

#### **Zielgruppe**

## **Audience**

This course is for anyone that needs to build experience with operating system based virtualization using Docker. The audience for this training includes the following:

Cloud administrators

POWER technical support individuals

POWER system administrators

POWER system engineers

POWER system architects

#### Voraussetzungen

# **Prerequisites**

Basic Linux skills

Basic PowerVM skills

# **Trainingsprogramm**

# **Course Outline**

Unit 1: Introduction to containers

Exercise 1: Accessing lab environment

Unit 2: Implementing containers on IBM Power Systems

Exercise 2: podman installation

Unit 3: Container operations

Exercise 3: Managing containers and images

Unit 4: Container orchestration

Exercise 4: Managing storage and networking

# Objective

After completing this course, you should be able to:

- Describe Linux containers architecture
- Install and configure Docker onto a Power Systems environment
- Perform Docker administration operations
- Install and configure CRI-O
- Perform basic container orchestration steps

# Schulungsmethode

# **Live Online Training**

1. Mai 2023 bis 2. Mai 2023

3. Jul 2023 bis 4. Jul 2023

18. Sep 2023 bis 19. Sep 2023

11. Dez 2023 bis 12. Dez 2023



# IBM LX071G - Power Systems Running Linux: Server Administration

🙎 Live Online oder Präsenz

Dauer: 3 Tage (9 Stunden) Nr.: 30170

Preis: 2.600,00 € netto 3.094,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

## **Overview**

This course introduces basic administrative tasks associated with Linux Servers hosted on Power Systems servers. This includes installation, command line operations, system administration, device management, IBM tools, and system recovery.

# Wer sollte teilnehmen:

#### **Zielgruppe**

## **Audience**

System administrators that have experience with either Linux or Power Systems, but not both. This course provides the bridge for those skill sets to be brought together.

#### Voraussetzungen

# **Prerequisites**

Students attending this course should have a basic background in systems administration and/or troubleshooting. No previous course ware is required.

# Trainingsprogramm

# **Course Outline**

Day 1

Unit 1 - Installing Linux on Power systems

Exercise 1 - Linux installation

Unit 2 - System management tools

Exercise 2 - System management tasks

#### Day 2

Exercise 2 - System management tasks (continued)

Unit 3 - Power Systems device operations and rescue mode

Exercise 3 - Manage Power systems devices and rescue operations

Unit 4 - Linux systemd

## Day 3

Unit 4 - Linux systemd (continued)

Exercise 4 - System administration

Unit 5 - Service and productivity tools

Exercise 4 - Linux on Power service productivity tools

# **Objective**

After completing this course, you should be able to:

- Recognize different execution environments that a Linux server runs on within a POWER8 processor based server
- Install Linux Server on a POWER8 processor based server
- Manage Linux Server within a POWER8 processor based server environment using standard tools
- Install and use IBM Service and Productivity tools
- Customize the configuration of the boot loader
- Use recovery mode to rescue a failed Linux instance

# Schulungsmethode

# **Live Online Training**

10. Jul 2023 bis 12. Jul 2023

20. Nov 2023 bis 22. Nov 2023



## IBM OE98G - Introduction to IBM i for New Users

🙎 Live Online oder Präsenz

Dauer: 8h00 Nr.: 30226

Preis: 800,00 € netto 952,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

In this classroom course, you will learn basic concepts and skills you need to be productive users on Power Systems with IBM i. With plenty of hands-on lab exercises, we show everything from signing onto the available user interfaces; green screen environment and IBM Navigator for i.

You will learn how objects are managed on the system and how you display these objects. You will learn to use control language (CL) commands (fast path) and how to work with and manage messages on the system. Students will also learn how to the system manages work and how you manage your printouts. Lastly, students will also get a basic overview of security.

# Wer sollte teilnehmen:

#### **Zielgruppe**

## **Audience**

This course is intended for new users employed in a data processing environment who are new to Power Systems with IBM i.

Voraussetzungen

# **Prerequisites**

There are no prerequisites for this course.

# **Trainingsprogramm**

# **Course Outline**

Welcome

Unit 1 - Introduction and overview to IBM i

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Unit 2 - Using the 5250 emulation interface
```

Exercise 1- Using the 5250 emulation interface

Unit 3 - Overview of IBM I Access Client Solutions

Exercise 2 - Overview of IBM i Access Client Solutions

Unit 4 - Using IBM Navigator for i

Exercise 3 - Using IBM Navigator for i

Unit 5 - Using the messages function on IBM i

Exercise 4 - Using the messages function with a display session

Exercise 5 - Using the messages function with IBM Navigator for i

Unit 6 - Using CL commands on IBM i

Exercise 6 - Using CL commands with a display session

Exercise 7 - Using CL commands with IBM Navigator for i

Unit 7 - Managing objects on IBM i

Exercise 8 - Object management on IBM i

Unit 8 - Managing your work on IBM i

Exercise 9 - Tracking jobs and printouts on IBM i

Unit 9 - IBM i security overview

Unit 10 - Additional education

## **Objective**

After completing this course, you should be able to:

- Explain the functions supported by IBM i operating systems
- •Explain Power System with IBM i models and generations
- Explain which applications are supported
- •Sign on / off the system
- •Use the display station keyboard
- •Use the online help that is available
- •Use the different interfaces available for IBM i
- Understand how objects are managed
- •Enter control language (CL) commands
- •Send and receive messages and work with message queues
- Manage work and output
- •Explain basic security concepts on IBM i

## **Schulungsmethode**

# **Live Online Training**

17. Aug 2023



# IBM OL19G - IBM i System Administration

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30157

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

## **Overview**

Learn how to plan for, implement, and manage the ongoing operations of an IBM i. Emphasis is on security, system availability, backup and recovery, system software management, and problem determination. Also, get an introduction to the architecture and terminology of the IBM i.

# Wer sollte teilnehmen:

#### Zielgruppe

## **Audience**

This is an intermediate course intended for IBM i system administrators, data processing managers and other individuals who implement and manage security, backup and recovery, system software and problem determination. This course is not recommended for system operators.

#### Voraussetzungen

## **Prerequisites**

You should:

- complete System Operator Workshop for IBM i (AS24G)
- have responsibility for implementing the security features available for IBM i
- have responsibility for the implementation of a backup and recovery plan and system availability for your Power Systems with IBM i

# **Trainingsprogramm**

## **Course Outline**

• Class administration and introductions

- IBM i overview and concepts
- Management central overview
- Security concepts and overview
- System values
- User security
- Resource security
- Security auditing
- Designing security
- IBM i availability overview
- Disk management
- Backup and recovery strategy using Save/Restore
- Journal management
- Commitment control overview
- Backup and recovery planning
- Problem determination
- Overview of Systems Director Navigator for i
- Introduction to BRMS

# **Objective**

- Describe and implement the components of IBM i security, such as user profile, group profile, authorization list, adopted authority and object / resource security
- Develop a security plan for your Power Systems with IBM i
- Describe the options to implement security auditing
- Develop a plan to audit security on your Power Systems with IBM i
- Describe the IBM i availability products and features and choose the option(s) that best fit your company requirements
- Describe how to backup and recover user, IBM and full system data on your Power Systems with IBM i
- Develop a backup and recovery plan for your Power Systems with IBM i
- Describe the system diagnostics and problem determination procedures available on your Power Systems with IBM i

# Schulungsmethode

# **Live Online Training**

26. Jun 2023 bis 30. Jun 2023

9. Okt 2023 bis 13. Okt 2023



# IBM OL20G - Control Language Programming Workshop for IBM i Republic Live Online oder Präsenz

Dauer : 32h00 Nr. : 30319

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Learn to write easy to use and efficient control language (CL) programs which may be used to perform a variety of system and application control functions. You are taught to write basic and intermediate level, interactive, and batch CL programs, user commands, and CL programs that function as user tools (programs that use the output of display commands as input).

You will learn to write Control Language (CL) programs which may be used to perform a variety of system and application control functions. You will be taught to write basic and intermediate level interactive and batch CL programs as well as programs that function as user tools (programs that use the output of display commands as input).

## Wer sollte teilnehmen:

#### **Zielgruppe**

## **Audience**

This intermediate course is for application programmers, system programmers, and others who have a need to write control language programs.

#### Voraussetzungen

## **Prerequisites**

You should be able to:

- Write simple programs in another programming language
- Perform basic IBM i operations
- Code the commands necessary to send inquiry and information messages
- Use data description specifications (DDS) and the Rational Development Studio (formerly known as Websphere Development Studio, WDS) tools (Programming Development Manager (PDM) and source entry utility (SEU)) to create physical, logical, and display files
- Use the WDS tools to enter CL source statements and create CL programs

- Describe basic work management
- Create a library, output queue, and a job description

These prerequisites can be met through successful completion of the following courses:

- Introduction to IBM i for New Users (OL98G)
- IBM i Technical Introduction (OL4AG)

# **Trainingsprogramm**

# **Course Outline**

CL programming concepts

• Lab - Set up your environment (required)

Basic CL programming

- Lab Write a basic CL program (required)
- Lab Initial program (required)
- Lab Menu-like program (required)
- Lab Call/Transfer control (required)
- Lab Calculator (required)

Program creation and debugging

• Lab - Debugging (required)

Intermediate CL programming

- Lab Data area retrieval (recommended)
- Lab External attributes CVAT, SST (recommended)

CL message programming (topic 1)

- Lab Basic message handling (required)
- Lab Send user message command (required)

CL message programming (topic 2)

- Lab Monitor message (required)
- Lab Message programming (required)
- Lab Inquiry messages (recommended)

User-written tools

• Lab - User-written tool (optional)

Batch jobs

- Lab SBMJOB and LDA (recommended)
- Lab Data queues (recommended)

Commands

• Lab - Commands (recommended)

# **Objective**

- Create CL programs that incorporate the full range of language operations and functions:
  - o Arithmetic, string, and boolean expressions
  - Relational operations
  - o Built-in functions
  - File handling
  - Message handling
  - o Retrieving IBM i information
  - o Program interaction and parameter passing
- Use the interactive source debugging facilities of STRDBG
- Describe how to create and call Integrated Language Environment (ILE) modules, programs, and service programs
- Create user-defined commands with and without parameters
- Create a control language program that processes a database file
- Create and invoke a program that is activated periodically and executes asynchronously from other jobs
- State the purpose of the parameters on the CRTBNDCL command and each section of the control language compiler listing

# Schulungsmethode

# **Live Online Training**

27. Jun 2023 bis 30. Jun 2023



# IBM OL23G - IBM i Performance Tuning - I: IBM i Structure, Tailoring and Basic Tuning

A Live Online oder Präsenz

Dauer: 16h00 Nr.: 30081

Preis : 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

# **Overview**

This classroom course of two days explains how to balance the workload on the IBM i system to ensure optimum performance. Specifically, this course explains how to manage workloads, measure system performance, and tune the operating system to meet processing requirements. Hands-on exercises give you the opportunity to use the system functions that are available for controlling workload and tuning system performance. Evaluation criteria presented in this course are based on the latest information available from IBM development labs.

## Wer sollte teilnehmen:

## **Zielgruppe**

## **Audience**

This is an intermediate course is designed for data processing managers, programmers, and analysts.

Voraussetzungen

# **Prerequisites**

You should be able to:

- Start and stop the operating system
- Start and stop subsystems
- Manage job, message, and output queues
- Describe security concepts and create user profiles

# **Trainingsprogramm**

# **Course Outline**

#### Day 1

- Introduction/class administration
- Unit 1 Work management
  - o Exercise 1 Job and subsystem information
- Unit 2 Creating a work environment
  - Exercise 2 Creating your own subsystem description
  - o Exercise 3 Special work management functions

#### Day 2

- Unit 3 Shipped system objects
  - o Exercise 4 System values and network attributes
- Unit 4 Job structure and execution logic
- Unit 5 Storage management
- Unit 6 System tuning
- Summary

# **Objective**

- Manage jobs by:
  - Setting the appropriate system values
  - o Modifying subsystem descriptions to fit the workload
  - Controlling batch jobs
  - o Tailoring job descriptions to fit processing needs
- Create unique environments for running jobs by:
  - o Creating subsystems for special applications
  - o Directing jobs to run in these subsystems
  - o Developing job descriptions for special jobs
- Tune the performance of the system by:
  - Setting up pools and activity levels to handle jobs
  - o Tailoring execution parameters for job priorities
  - o Evaluating current performance using information provided by the system
  - o Changing system values and parameters as the workload changes

# **Schulungsmethode**

# **Live Online Training**

30. Mär 2023 bis 31. Mär 2023

6. Jul 2023 bis 7. Jul 2023

7. Sep 2023 bis 8. Sep 2023

12. Okt 2023 bis 13. Okt 2023



# IBM OL66G - IBM i Performance Tuning - II: Advanced Analysis and Capacity Tuning

Live Online oder Präsenz

Dauer: 32h00 Nr.: 30344

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course will help you to better understand the techniques of performance analysis and capacity planning on systems and partitions running IBM i and develop an appreciation of how IBM i operates and interfaces with applications. This course is expected to build skills to better manage performance and capacity on systems and partitions running IBM i.

The course explains IBM i concepts, including the Technology Independent Machine Interface (TIMI), main storage pools, auxiliary storage pools, management of jobs, threads, and tasks, job run-time structure, performance monitoring, data collection, and analysis of performance data.

This course includes hands-on activities using performance data from IBM i systems to help the student appreciate the concepts discussed. This course is designed for those running Power Systems on IBM i. While it includes i 7.2 content, it is suitable for those currently using prior versions of IBM i.

The first part of this course (units 1-6) focus on teaching the performance management process, the performance considerations of key hardware components and virtualization options, and tuning options to help optimize performance. During these lectures, students should gain an appreciation of the unique storage management and work management components in the IBM i architecture and how these components need to be managed for optimal performance.

The second part of this course focuses on the tools and techniques to monitor, analyze, and plan for performance of Power Systems with IBM i and Logical partitions (LPARs).

The primary analysis tool that will be used is the Performance Data Investigator (PDI) which is included with IBM Navigator for i. PDI is also used with IBM Systems Workload Estimator (WLE) for capacity planning activities.

# Wer sollte teilnehmen: Zielgruppe

## **Audience**

This course is intermediate complexity and is suitable for IBM clients, Business Partners, and technical support and service individuals interested in performance management and capacity planning on Power Systems and logical partitions (LPARs) running IBM i.

#### Voraussetzungen

# **Prerequisites**

It is advantageous if you have completed the following course or if you have equivalent skills or experience on the IBM i work management and basic tuning:

• IBM i Performance Tuning - I: Performance Tools and Basic Tuning (OL23G)

Knowledge of IBM WebQuery for i or other query options will be useful.

# **Trainingsprogramm**

## **Course Outline**

#### Day 1

- Welcome
- Unit 1: Performance management process
- Unit 2: IBM Power Systems
- Unit 3: Components of performance
- Unit 4: Disk performance considerations
- Unit 5: Logical partition performance considerations

#### Day 2

- Unit 6: Work management review and tuning options
- Unit 7: Real-time monitoring
- Unit 8: Collection Services: Data collection
- Unit 9: Performance Data Investigator overview
- Unit 10: Investigating data: Collection Services
  - o Lab 1: Review performance data
- Unit 11: Performance Tools reports and graphs

#### Day 3

- - o Lab 2: Performance reports
- Unit 12: Capacity planning
  - Lab 3: Estimate performance requirements
- Unit 13: Collection Services data files
  - Lab 4: Performance data: QAPMDISK (optional)
  - Lab 5: Disk performance analysis with PDI

#### Day 4

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- Lab 6: Analyze QAPMSYSTEM data
- Unit 14: Run-time (run/wait) analysis
  - Lab 7: Run-time analysis
- Unit 15: Investigating data: Disk Watcher Unit 16: Investigating data: Job Watcher
  - Lab 8: Disk Watcher analysis
  - o Lab 9: Job Watcher analysis

# **Objective**

- Understand the techniques of performance analysis and capacity planning of Power Systems and logical partitions (LPARs) running IBM i
- Acquire the skills to better manage performance on Power Systems running IBM i
- Enhance your knowledge of IBM i storage management, job / thread / task management, and the use of performance data collection, and monitoring tools to better manage IBM i work
- · Manage the latest virtualization and logical partitioning features of Power Systems for optimal performance
- Use the latest tools and methodologies in IBM i 7.1 and IBM i 7.2 to manage and analyze system and application performance
- Gain experience with Performance Data Investigator in IBM Navigator for i including Collection Services, Job Watcher, and Disk Watcher features
- Use IBM Workload Estimator and other performance tools to perform sizing and capacity planning on Power Systems
- Understand methodologies for identifying and selecting appropriate performance data when planning upgrades and other capacity planning tasks

# **Schulungsmethode**

# **Live Online Training**

11. Jul 2023 bis 14. Jul 2023

16. Okt 2023 bis 19. Okt 2023



# IBM OP05G - Introducing z/OS UNIX System Services

🙎 Live Online oder Präsenz

Dauer : 20h00 Nr. : 30335

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course describes how open standards are implemented in a z/OS system by z/OS UNIX. UNIX System Services are introduced, and the role of z/OS as a server in the open systems environment is discussed. This is an introductory level course. It provides an overview of z/OS UNIX System Services (usually abbreviated to z/OS UNIX) as seen by the user. Details of installation and implementation for system programmers are not covered in this course.

# Wer sollte teilnehmen:

#### **Zielgruppe**

## **Audience**

This intermediate course is for all computer professionals who will use z/OS UNIX.

#### Voraussetzungen

# **Prerequisites**

You should have a basic knowledge of z/OS equivalent to the course *An Introduction to the z/OS Environment (ES05G)*.

# **Trainingsprogramm**

# **Course Outline**

Day 1

- Welcome and introduction
- Unit 1. z/OS UNIX overview
- Unit 2. Introduction to z/OS UNIX
- Unit 3. Hierarchical file system

Exercises

#### Day 2

- Unit 4. z/OS UNIX shell and utilities
- Unit 5. z/OS UNIX shell commands
- Unit 6. Working with the shell
- Unit 7. Functions in z/OS UNIX
- Exercises

#### Day 3

- Unit 8. Working with the z/OS UNIX environment
- Exercises

# **Objective**

- Discuss the role of z/OS in an open systems environment
- Identify the basic terms used in z/OS UNIX
- Define the components of z/OS UNIX
- Explain major functions provided in z/OS UNIX
- Discuss opportunities for applications in a z/OS UNIX environment
- Identify z/OS base elements and optional features that make up z/OS UNIX
- Use the two interactive interfaces available to access the services

# Schulungsmethode

# **Live Online Training**

5. Apr 2023 bis 7. Apr 2023

12. Jun 2023 bis 14. Jun 2023

6. Nov 2023 bis 8. Nov 2023



# IBM OP25G - z/OS UNIX System Services Implementation

🙎 Live Online oder Präsenz

Dauer: 36h00 Nr.: 30305

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

## **Overview**

This course is designed to provide you with the skills required to install and customize z/OS UNIX (full name z/OS UNIX System Services), and to manage and monitor the z/OS UNIX environment.

# Wer sollte teilnehmen:

## **Zielgruppe**

## **Audience**

This is an intermediate course for experienced data professionals such as z/OS system programmers, who are responsible for the installation and maintenance of z/OS UNIX.

#### Voraussetzungen

# **Prerequisites**

You should have:

• a basic knowledge of z/OS UNIX as provided in the course Introducing z/OS UNIX Services (OP05)

# **Trainingsprogramm**

## **Course Outline**

#### Day 1

- Welcome
- Unit 1: z/OS UNIX implementation overview
- Unit 2: z/OS UNIX services initial installation
- Exercise 1: Move from default to full mode function

- Exercise 2: IPL in full function mode and enable a nonvolatile root HFS
- Unit 3: File system customization

#### Day 2

- Exercise 3: Customizing the file system
- Unit 4: Security customization
- Exercise 4: Defining and managing UNIX users, OMVS security

#### Day 3

- Unit 5: Shell customization
- Exercise 5: UNIX System Services and shell customization
- Unit 6: Customizing applications, daemons, and servers
- Exercise 6: UNIX processes
- Exercise 7: Access control list and enhanced ASCII support (optional)

#### Day 4

- Unit 7: File system management and system maintenance
- Exercise 8: Managing HFS and zFS data sets
- Unit 8: Managing z/OS UNIX operations
- Unit 9: Exploiting TCP/IP with z/OS UNIX
- Exercise 9: Managing z/OS UNIX

# **Objective**

- Execute the tasks required to prepare a z/OS installation for implementing z/OS UNIX
- Execute the tasks to install the z/OS UNIX software features
- Use the information provided in this class to perform the basic customization necessary to fully implement the z/OS UNIX kernel, the file system, the shell and utilities, and z/OS UNIX applications
- Put in place the RACF security required for z/OS UNIX resources and applications
- Make appropriate definitions for the activation of TCP/IP sockets by z/OS UNIX
- Identify and use the processes and data required for monitoring and tuning the z/OS UNIX environment

# Schulungsmethode

# **Live Online Training**

24. Apr 2023 bis 28. Apr 2023

3. Jul 2023 bis 7. Jul 2023

7. Aug 2023 bis 11. Aug 2023

20. Nov 2023 bis 24. Nov 2023



# IBM QZC50G - DevOps with Private Cloud on IBM Power Systems: Learn Ansible, Chef, and Puppet

A Live Online oder Präsenz

Dauer: 24h00 Nr.: 30114

Preis : 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

## **Overview**

DevOps is an IT trend that rose out of the benefits of integrating development and operations. The main characteristic of DevOps is to use automation and monitoring at several stages of the IT delivery lifecycle. DevOps aims to reduce administrator workload and scale IT resources efficiently to attain business objectives.

The course addresses the concepts involved in planning, deploying and implementing Ansible, Chef and Puppet, and shows how to integrate these tools with IBM Cloud PowerVC Manager. You perform basic installation to advanced administrative tasks with these DevOps tools. In addition, the product architectures of these tools, and their benefits are covered while showing how to implement these tools to fit your needs.

## Wer sollte teilnehmen:

# Zielgruppe

## **Audience**

Enrollment in this course is not restricted. Typical students may include:

- Customers
- Technical IBM personnel
- Business Partner technical personnel
- IT consultants and architects

#### Voraussetzungen

# **Prerequisites**

## **Trainingsprogramm**

## **Course Outline**

Summarize the key principles of DevOps in IT

Recognize the requirements and procedure to setup Ansible

Summarize the architecture of Ansible

Demonstrate an understanding of automation with Ansible Playbooks

Recognize the requirements and procedure to setup Chef

Summarize the key components of automating your cloud environment with Chef

Demonstrate an ability to access and interact with Chef

Summarize the various Chef related administrative tasks you can perform with Chef

Summarize the procedure to setup Puppet and its prerequisites

Summarize the architecture of Puppet

Recognize the various tasks which can be performed when Puppet is integrated with IBM PowerVC to manage AIX and Linux clients

# Objective

- Summarize the key principles of DevOps in IT
- Recognize the requirements and procedure to setup Ansible
- Summarize the architecture of Ansible
- Demonstrate an understanding of automation with Ansible Playbooks
- Recognize the requirements and procedure to setup Chef
- Summarize the key components of automating your cloud environment with Chef
- Demonstrate an ability to access and interact with Chef
- Summarize the various Chef related administrative tasks you can perform with Chef
- Summarize the procedure to setup Puppet and its prerequisites
- Summarize the architecture of Puppet
- Recognize the various tasks which can be performed when Puppet is integrated with IBM PowerVC to manage AIX and Linux clients

# **Schulungsmethode**

# **Live Online Training**

31. Jul 2023 bis 2. Aug 2023



# IBM SN71G - Storage Area Networking Fundamentals

🙎 Live Online oder Präsenz

Dauer: 32h00 Nr.: 30060

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

IBM offers a comprehensive portfolio of SAN switches, storage, software, services and solutions to reliably bring information to people in a cost effective way. IBM provides flexible, scalable and open standards-based business-class and global enterprise-class storage networking solutions for the on demand world.

This course provides an overview of storage network and data center networking technology. It reviews SAN concepts, Fibre Channel architecture, SAN topologies, IBM b-type offerings, IBM offerings from Cisco, and SAN over Ethernet architectures, such as iSCSI and FCoE.

# Wer sollte teilnehmen:

#### **Zielgruppe**

## **Audience**

This is a base course for individuals who are involved in the planning, installing, configuring, and upgrading of IBM systems.

#### Voraussetzungen

# **Prerequisites**

The following course, or equivalent knowledge, is required prior to this course:

• Introduction to Storage (SS01)

For additional course information and roadmaps please visit our training site:

www.ibm.com/training

# **Trainingsprogramm**

# **Course Outline**

Day 1

WelcomeUnit 1 - SAN ConceptsUnit 2 - Fibre ChannelUnit 3 - SAN design and topology (1 of 2)

Day 2

Unit 3 - SAN design and topology (2 of 2) (continued)Unit 4 - IBM Fibre Channel b-type switches and directors

Day 3

Exercise 0 - Lab setup and preliminary instructionsExercise 1 - Switch management overviewExercise 2 - Management software installationExercise 3 - Zoning configurationExercise 4 - Configuring the IBM Storwize V3700 storage systemExercise 5 - V3700 storage provisioning using iSCSIExercise 6 - Brocade VDX fabric mergingUnit 5 - Cisco MDS Fibre Channel switches and directors

Day 4

Unit 6 - SAN over EthernetExercise 7 - Basic configurationExercise 8 - Management tools installationExercise 9 - VSAN creationExercise 10 - Zoning configuration on CiscoExercise 11 - Configuring the DS3500 storage subsystem

# **Objective**

After completing this course, you should be able to:

Classify the components of a SAN infrastructure

Appraise the Fibre Channel architecture and terms

Classify the three major components of a SAN

Differentiate the features of the IBM Storage System b-type switch offerings

Differentiate the features of the IBM offered Cisco SAN switches and directors

Evaluate the implementations of iSCSI and FCoE

# Schulungsmethode

# **Live Online Training**

6. Jun 2023 bis 9. Jun 2023

7. Nov 2023 bis 10. Nov 2023



# IBM SNV1G - SAN Volume Controller (SVC) Planning and Implementation Workshop

A Live Online oder Präsenz

Dauer: 32h00 Nr.: 30234

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

## **Overview**

Plan and implement IBM SAN Volume Controller in your data center!

After completing this course, you should be able to:

- Distinguish the concepts of IBM Spectrum virtualization
- Recall the history for IBM SAN Volume Controller
- Classify the characteristics and components of the IBM SAN Volume Controller system and SAS attached expansion enclosures
- Outline setups required to integrate an SVC system solution
- Summarize the SVC systems' ability to scale for capacity and performance
- · Summarize the virtualization process converting physical storage space into virtual resources
- Recall the process to create host access storage on an SVC system
- Differentiate the advanced software features designed to simplify data management, reclaim storage space, and preserve storage investments
- · Differentiate methods in which to migrate data to and from the virtualized system environment
- Summarize the methods of remote data replications to improve availability and support for disaster recovery
- Employ administrative operations to manage, monitor, and troubleshoot the system environment
- Summarize the characteristics of IBM Storage Insights' ability to identify, troubleshoot and minimize potential system downtime
- Summarize 3-Site Replication and Safeguarded Copy

#### Agenda:

- Day 1:
- Unit 1: Introduction to IBM SAN Volume Controller
- Unit 2: IBM SAN Volume Controller Hardware Architecture
- Unit 3: IBM SVC SAS-Attached Storage
- Unit 4: IBM SVC System Scaling
- Unit 5: IBM SVC System Installation and Management Access
- Exercise 0: Lab environment overview
- Exercise 1: System user authentication
- Day 2:
- Unit 6: IBM Spectrum Virtualize: Storage Provisioning
- Unit 7: IBM Spectrum Virtualize Volume Allocation
- Unit 8: IBM Spectrum Virtualize Host Integration
- Unit 9: IBM Spectrum Virtualize Data Reduction Technologies
- Exercise 2: Manage external storage resources
- Exercise 3: Provision external storage resources
- Exercise 4: Windows host definitions and volume allocations
- Exercise 5: AIX host definitions and volume allocations
- Exercise 6: iSCSI host definitions and volume allocations
- Exercise 7: Thin Provisioning and Volume Mirroring
- Day 3:
- Unit 10: IBM Spectrum Virtualize Easy Tier
- Unit 11: IBM Spectrum Virtualize Data Migration
- Unit 12: IBM Spectrum Virtualize FlashCopy and Consistency Groups
- Unit 13: IBM Spectrum Virtualize Remote Data Mirroring
- Exercise 8: Data pool migration
- Exercise 9: Migrate existing data with Import Wizard
- Exercise 10: Migrate existing data with Migration Wizard
- Exercise 11: Migrate existing data with Import Wizard CLI
- Exercise 12: System scripting
- Day 4:
- Unit 14: IBM Spectrum Virtualize Administration Management
- Unit 15: IBM Storage Insights
- Unit 16: IBM Spectrum Virtualize 3-Site Replication
- Unit 17: IBM Spectrum Virtualize Safeguarded Copy
- Exercise 13: IBM Real-time Compression and IBM Comprestimator
- Exercise 14: FlashCopy and consistency groups
- Exercise 15: Volume expansion
- · Exercise 16: Monitoring user roles and access

## Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This intermediate lecture and exercise-based course is for individuals who are assessing and/or planning to deploy networked storage virtualization solutions.

## Voraussetzungen

# **Prerequisites**

# **Trainingsprogramm**

## **Course Outline**

- Day 1:
- Unit 1: Introduction to IBM SAN Volume Controller
- Unit 2: IBM SAN Volume Controller Hardware Architecture
- Unit 3: IBM SVC SAS-Attached Storage
- Unit 4: IBM SVC System Scaling
- Unit 5: IBM SVC System Installation and Management Access
- Exercise 0: Lab environment overview
- Exercise 1: System user authentication
- Day 2:
- Unit 6: IBM Spectrum Virtualize: Storage Provisioning
- Unit 7: IBM Spectrum Virtualize Volume Allocation
- Unit 8: IBM Spectrum Virtualize Host Integration
- Unit 9: IBM Spectrum Virtualize Data Reduction Technologies
- Exercise 2: Manage external storage resources
- Exercise 3: Provision external storage resources
- Exercise 4: Windows host definitions and volume allocations
- Exercise 5: AIX host definitions and volume allocations
- Exercise 6: iSCSI host definitions and volume allocations
- Exercise 7: Thin Provisioning and Volume Mirroring
- Day 3:
- Unit 10: IBM Spectrum Virtualize Easy Tier
- Unit 11: IBM Spectrum Virtualize Data Migration
- Unit 12: IBM Spectrum Virtualize FlashCopy and Consistency Groups
- Unit 13: IBM Spectrum Virtualize Remote Data Mirroring
- Exercise 8: Data pool migration

- Exercise 9: Migrate existing data with Import Wizard
- Exercise 10: Migrate existing data with Migration Wizard
- Exercise 11: Migrate existing data with Import Wizard CLI
- Exercise 12: System scripting
- Day 4:
- Unit 14: IBM Spectrum Virtualize Administration Management
- Unit 15: IBM Storage Insights
- Unit 16: IBM Spectrum Virtualize 3-Site Replication
- Unit 17: IBM Spectrum Virtualize Safeguarded Copy
- Exercise 13: IBM Real-time Compression and IBM Comprestimator
- Exercise 14: FlashCopy and consistency groups
- Exercise 15: Volume expansion
- Exercise 16: Monitoring user roles and access

## **Objective**

- Distinguish the concepts of IBM Spectrum virtualization
- Recall the history for IBM SAN Volume Controller
- Classify the characteristics and components of the IBM SAN Volume Controller system and SAS attached expansion enclosures
- Outline setups required to integrate an SVC system solution
- Summarize the SVC systems' ability to scale for capacity and performance
- Summarize the virtualization process converting physical storage space into virtual resources
- Recall the process to create host access storage on an SVC system
- Differentiate the advanced software features designed to simplify data management, reclaim storage space, and preserve storage investments
- Differentiate methods in which to migrate data to and from the virtualized system environment
- Summarize the methods of remote data replications to improve availability and support for disaster recovery
- Employ administrative operations to manage, monitor, and troubleshoot the system environment
- Summarize the characteristics of IBM Storage Insights' ability to identify, troubleshoot and minimize potential system downtime
- Summarize 3-Site Replication and Safeguarded Copy

## Schulungsmethode

# **Live Online Training**

24. Apr 2023 bis 27. Apr 2023 13. Jun 2023 bis 16. Jun 2023 15. Aug 2023 bis 18. Aug 2023

10. Okt 2023 bis 13. Okt 2023 21. Nov 2023 bis 24. Nov 2023



# **IBM SS01G - Introduction to Storage**

🙎 Live Online oder Präsenz

Dauer: 24h00 Nr.: 30401

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course covers basic data storage concepts and IBM solutions in this space. You will learn RAID, SAN connectivity, high availability, business continuity planning for disaster recovery, storage virtualization, cloud storage and more. You will learn all about IBM Storage products (disks, flash, tape, SAN switches and directors) and the IBM Spectrum suite of software for accessing and managing on and off premises data storage.

# Wer sollte teilnehmen:

#### **Zielgruppe**

## **Audience**

Enrollment in this course is not restricted. Typical students may include: Customers Technical IBM personnel Business Partner technical personnel IT consultants and architects

Voraussetzungen

## **Prerequisites**

None

# **Trainingsprogramm**

# **Course Outline**

Unit 1: Course OverviewUnit 2: Essentials of storageUnit 3: Data Protection and High AvailabilityUnit 4: Storage VirtualizationUnit 5: IBM System Storage Disk Systems and Flash Based SystemsUnit 6: IBM System Storage Tape SystemsUnit 7: IBM System Storage SAN Family OverviewUnit 8: IBM Storage and CloudUnit 9: IBM Spectrum Storage

# **Objective**

Upon completion of this course you should be able to:

Recall the essentials of disk storage

Outline the continuity plans to maintain high availability and data protection in storage solutions

Restate the concepts of the storage virtualization

Differentiate the types of the hybrid and all-flash storage solutions

Compare the types of the tape storage solutions

Distinguish between storage connectivity options

Differentiate between the features of the Spectrum Storage Suite of software

Clarify the various cloud storage considerations

#### **Key Topics**

Unit 1: Essentials of storage Unit 2: Data protection and high availability Unit 3: Storage virtualization Unit 4: IBM Spectrum Storage - SDS Unit 5: IBM Spectrum Storage - management and protection Unit 6: IBM Storage disk and flash based systemsUnit 7: IBM Storage tape systems Unit 8: IBM Storage SAN family overview Unit 9: IBM Storage and cloud

# Schulungsmethode

# **Live Online Training**

31. Mai 2023 bis 2. Jun 2023

1. Nov 2023 bis 3. Nov 2023



# IBM SS83G - z/OS VSAM and Access Method Services

🙎 Live Online oder Präsenz

Dauer : 32h00 Nr. : 30323

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

## **Overview**

This course is designed to teach how to manage VSAM and non-VSAM data sets by coding and using the functions and features of the Access Method Services program, IDCAMS.

To reinforce the lecture material, machine exercises are provided that enable students to code and test selected IDCAMS commands such as DEFINE, REPRO, ALTER, and LISTCAT.

Learn to manage Virtual Storage Access Method (VSAM) and non-VSAM data sets. Particularly emphasize coding and using the functions of the IDCAMS program. Lab exercises enable you to code and test selected IDCAMS commands, such as DEFINE, REPRO, ALTER, and LISTCAT.

Hands-On Labs

Eight labs are included to address:

- IDCAMS commands, including ALTER, DEFINE, CLUSTER, EXPORT, IMPORT, EXAMINE, LISTCAT, REPRO, and PRINT
- tuning VSAM and the VSAM buffers
- alternate indexes

# Wer sollte teilnehmen:

#### Zielgruppe

# **Audience**

This is an intermediate course for individuals who manage data sets using IDCAMS and VSAM.

Voraussetzungen

# **Prerequisites**

You should complete:

- z/OS Facilities (ES15)
- z/OS Job Control Language and Utilities (ES07) or
- Fundamental System Skills in z/OS (ES10)
- or have equivalent experience

## **Trainingsprogramm**

## **Course Outline**

#### Introduction to VSAM data sets

- describe the structure, organization, and use of VSAM clusters
- explain the function of Control Intervals (CI) and Control Areas (CA)
- · describe the purpose of CI splits and CA splits and how they are accomplished
- estimate DASD space requirements for various cluster types

#### ICF catalogs

- discuss the use of the ICF catalog
- describe the structure, purpose, and basic contents of the master catalog
- describe how the master catalog is located at initial program load (IPL) time
- discuss the structure, purpose, and basic contents of user catalogs
- create the ICF catalogs
- describe the catalog search
- discuss and create the two types of alias

#### IDCAMS commands, part 1

- discuss the IDCAMS program
- code the JCL to run IDCAMS
- code the DEFINE CLUSTER command to create specific VSAM data set organizations
- code the LISTCAT command to format and print entries from the catalog

#### JCL for VSAM

- explain creation and deletion of VSAM clusters using JCL and the DFSMS data class facility
- describe the additional JCL parameters that support VSAM clusters
- discuss the purpose of data class
- · explain the assignment of data class through JCL and the Automatic Class Selection (ACS) routines

#### IDCAMS commands, part 2

- describe the function of REPRO, PRINT and DELETE commands
- use REPRO to load and back up a VSAM cluster
- use PRINT to print a VSAM cluster in various formats
- use DELETE to remove the catalog entry for the data set and scratch the data set from the volume
- describe and code modal commands to provide for conditional execution of Access Method Services (AMS) statements

#### **Buffering**

- explain how buffer space may impact performance either positively or negatively
- explain the use of data and index buffers in sequential processing and direct processing
- evaluate the use of JCL Access Method Parameters (AMP) keywords to manage buffers

• code the buffer keywords on the Dataset Definition (DD) statement

#### VSAM integrity and security

- explain how integrity and security is maintained
- discuss the meaning and use of SHAREOPTIONS
- discuss the need for serialization of updates to a data set
- describe how ENQ/DEQ macros are used to serialize data set updates in multiregion and multisystem environments
- explain the impact of buffering and SHAREOPTION modifications
- explain VSAM record level sharing
- use the VSAM integrity and security options: RECOVERY, ERASE, VERIFY, and passwords
- compare VSAM passwords with Resource Access Control Facility (RACF) security

#### **Tuning**

- explain the use of CI and CA FREESPACE
- discuss the performance impact of cache
- describe the space allocation process with KEYRANGES and multivolume data sets
- explain the contents of an Index CI
- explain how VSAM key compression works

#### **IDCAMS ALTER**

- explain the basic functions of the ALTER command
- code the ALTER command to modify options for processing existing VSAM objects
- · code the ALTER command to modify options for buffering, FREESPACE, SHAREOPTIONS and passwords

#### Alternate indexes

- describe the reasons for using an alternate index
- discuss the basic contents of an alternate index
- use a PATH to process base cluster records directly and in alternate key sequence
- define and load an alternate index
- · explain the impact of SHAREOPTIONS when opening a base cluster and associated alternate indices
- explain programming and JCL considerations

#### Advanced functions and extended format data sets

- explain VSAM advanced functions, extended format data sets, and their major features
- explain data stripping
- explain compression
- explain multivolume allocation options
- explain extended addressability
- explain system managed buffering
- · explain partial space release
- explain space constraint relief

#### Data set reorganization, backup, and recovery

- describe the need for data set backup
- explain the advantages and disadvantages of REPRO
- explain the advantages and disadvantages of EXPORT / IMPORT
- explain the advantages and disadvantages of DFSMS Data Set Services (DFSMSdss) DUMP / RESTORE
- explain the advantages and disadvantages of DFSMS Hierarchical Storage Management (DFSMShsm) HBACKDS /

#### **HRECOVER**

- discuss backup frequency
- · determine when reorganization is required
- code the AMS commands for backup, recovery, and reorganization

#### Linear Data Sets (LDS)

- describe Data-In-Virtual (DIV)
- explain the structure and use of LDS
- explain the use of the DIV macro to access LDS
- discuss candidates for LDS

#### Management and problem analysis aids

- explain the use of the DCOLLECT command to gather management and planning information about the storage subsystem
- discuss tools used to identify and trace VSAM errors
- code the AMS EXAMINE command to test the structure of a Key Sequenced Data Set (KSDS)
- interpret EXAMINE output to determine how to recover from a KSDS structural error
- invoke the Generalized Trace Facility (GTF) to track VSAM-related events
- invoke utilities to print GTF trace output

#### Local and global shared resources

- explain techniques to conserve virtual storage by sharing buffers and control blocks
- discuss the concept of shared resource pools
- discuss the advantages and disadvantages of Local Shared Resources (LSR)
- discuss the advantages and disadvantages of Global Shared Resources (GSR)
- describe macros that control use and allocation of shared resources
- discuss how to specify and monitor shared buffer allocation in CICS and Information Management System (IMS)

#### CICS VSAM recovery

- describe the major functions of CICS VSAM recovery
- explain the concept of transaction processing, backup, and recovery
- · explain how to implement and manage CICS VSAM recovery

#### Application coding considerations

- describe VSAM processing terminology
- define various VSAM processing options
- explain the merge of catalog entries, JCL parameters, and program definitions that determine processing options
- discuss VSAM programming support, and JCL requirements in Common Business Oriented Language (COBOL), Programming Language One (PL/I), and Assembler languages
- describe JCL and programming requirements for COBOL, PL/I, and Assembler languages

## Objective

- Understand the structure and use of VSAM data sets or clusters
- Code IDCAMS commands to define and load VSAM clusters
- Code IDCAMS commands to define and load alternate indexes
- Code IDCAMS commands to list, alter, and delete catalog entries
- Code IDCAMS commands to print data sets
- Calculate the Direct Access Storage Device (DASD) space requirements for VSAM clusters
- Code the Job Control Language (JCL) for IDCAMS and programs which process VSAM clusters

- Use IDCAMS and JCL options to improve the performance of a VSAM job
- Reorganize, back up, and recover VSAM and non-VSAM data sets
- Interpret an IDCAMS listing of an Integrated Catalog Facility (ICF) catalog
- Select and use the appropriate documentation to utilize VSAM and IDCAMS

# Schulungsmethode

# **Live Online Training**

10. Apr 2023 bis 13. Apr 2023 29. Mai 2023 bis 1. Jun 2023 10. Jul 2023 bis 13. Jul 2023

17. Jul 2023 bis 20. Jul 2023 25. Sep 2023 bis 28. Sep 2023 7. Nov 2023 bis 10. Nov 2023



# **IBM SS84G - DFSMS Implementation**

🙎 Live Online oder Präsenz

Dauer : 32h00 Nr. : 30298

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course provides the skills required to plan and implement Data Facility Storage Management Subsystem (DFSMS). A step-by-step implementation strategy, emphasizing coexistence considerations, is reinforced by hands-on labs. In the hands-on labs, students will be creating constructs as well as coding ACS routines. This milestone approach includes managing temporary and permanent data sets. The course also discusses exploitation of functions provided by DFSMS as the installation evolves to the DFSMS environment.

## Wer sollte teilnehmen:

## **Zielgruppe**

#### **Audience**

This is an intermediate course is for personnel responsible for developing and implementing effective storage management techniques using DFSMS.

#### Voraussetzungen

# **Prerequisites**

You should take the following courses or equivalent knowledge may be substituted for these courses.

• Introduction to Storage (SS01G)

It is recommended that the student have programming experience which will aid in the writing of the ACS routines.

# **Trainingsprogramm**

## **Course Outline**

Day 1

- Welcome
- Unit 1 Course introduction and DFSMS overview Lab 1 ISMF
- Lab 1 Review
- Unit 2 Activating SMS

#### Day 2

- Lab 2 Activating SMS with minimal configuration
- Lab 2 Review
- Unit 3 Writing ACS routines
- Unit 4 Managing temporary data sets
- Lab 3 Managing temporary data sets

#### Day 3

- Lab 3 Review
- Unit 5 Exploiting DFSMS
- Unit 6 Managing permanent data sets
- Lab 4 Managing permanent data sets

#### Day 4

- Lab 4 Review
- Unit 7 Using NaviQuest
- Unit 8 Device preparation and data movement
- Lab 5 Volume and data set conversion to SMS
- Lab 5 Review
- Unit 9 Controlling DFSMS
- Lab 6 System operations
- Unit 10 Additional considerations

# **Objective**

- Establish a DFSMS configuration to automatically enforce your installation's storage management policies
- Convert service level requirements into appropriate parameters for data class, storage class, management class, and storage groups
- Create and test automatic class selection (ACS) routines
- Convert volumes and move data to system-managed volumes with data facility data set services (DFSMSdss)
- Specify appropriate management class and storage group parameters for
- DFSMShsm processing of system-managed data sets
- Establish procedures to control, manage, and recover the storage management subsystem with ISMF and operator commands
- Develop a DFSMS implementation plan

# **Schulungsmethode**

# **Live Online Training**

17. Apr 2023 bis 20. Apr 2023

25. Jul 2023 bis 28. Jul 2023

7. Nov 2023 bis 10. Nov 2023



# **IBM SS86G - DFSMShsm Implementation**

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30179

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

## **Overview**

This course prepares you to implement and manage DFSMShsm (DFSMS hierarchical storage manager). You will learn how to automate the storage management tasks, which optimize DASD space utilization and provide data availability. You will be taught basic DFSMShsm terminology and concepts, and you will examine the functions and interfaces used to tailor DFSMShsm processing to meet your installation's storage management requirements.

Hands-on lab exercises enable you to perform a step-by-step implementation.

# Wer sollte teilnehmen:

### **Zielgruppe**

#### **Audience**

This is an intermediate course for storage administrators who are new to using DFSMShsm.

#### Voraussetzungen

# **Prerequisites**

You should be familiar with the basic concepts of data storage systems and with storage management activities. This knowledge can be acquired by taking the following two courses:

- An Introduction to Data Storage Subsystems (Classroom) (SS050)
- Storage Management Fundamentals (Classroom) (SS060)

or

• Storage Management Fundamentals (Instructor-led Online) (SK060)

Equivalent experience may be substituted for these courses.

# **Trainingsprogramm**

# **Course Outline**

#### Day 1

- Welcome and introduction
- Unit 1: Overview DFSMShsm functions and environment
- Exercise 1: ISMF introduction

#### Day 2

- Exercise 1: Review
- Unit 2: Space management
- Exercise 2: Preparing DFSMShsm for space management
- Unit 3: Command space management
- Exercise 3: Command space management

#### Day 3

- Exercise 3: Review
- Unit 4: Availability management
- Exercise 4: Preparing DFSMShsm for availability management
- Unit 5: Command availability management
- Exercise 5: Command availability management

#### Day 4

- Exercise 5: Review
- Unit 6: DFSMShsm in large systems
- Unit 7: Recovery
- Exercise 6: Recovery
- Unit 8: DFSMShsm forward recovery
- Exercise 7: Forward recovery

#### Day 5

- Exercise 7: Review
- Unit 9: Managing and monitoring DFSMShsm

## **Objective**

- Understand the relationship between DFSMShsm and DFSMS and get an overview of the functions of DFSMShsm and its operating environment.
- Understand the DFSMShsm activities for Primary and Secondary Space Management and setup the required configuration for automatic space management.
- Authorize special users for DFSMShsm commands and perform space management functions using authorized DFSMShsm commands.
- Understand the DFSMShsm activities for Availability Management and setup the required configuration for automatic availability management.
- Implement the Automatic Backup and Recovery Support (ABARS), and perform data set and volume management using authorized DFSMShsm commands.
- Understand DFSMShsm processing in large systems.

- Understand recovery using ABARS, recovery from data set or volume loss, recovery of control data sets and iournals.
- Use the AUDIT command to detect and fix discrepancies and the LIST, QUERY and FIXCDS commands to correct error situations.
- Manage and monitor DFSMShsm using log data sets and statistical information as well as manage DFSMShsm tapes.

# Schulungsmethode

# **Live Online Training**

24. Apr 2023 bis 28. Apr 2023

31. Jul 2023 bis 4. Aug 2023



# IBM SSE1G - IBM Storwize V7000 Implementation Workshop

🙎 Live Online oder Präsenz

Dauer: 32h00 Nr.: 30366

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course is designed to leverage SAN storage connectivity by integrating a layer of intelligence of virtualization, the IBM Storwize V7000 to facilitate storage application data access independence from storage management functions and requirements. The focus is on planning and implementation tasks associated with integrating the Storwize V7000 into the storage area network. It also explains how to:

- Centralize storage provisioning to host servers from common storage pools using internal storage and SAN attached external heterogeneous storage.
- Improve storage utilization effectiveness using Thin Provisioning and Real-Time Compression
- Implement storage tiering and optimize solid state drives (SSDs) or flash systems usage with Easy Tier.
- Facilitate the coexistence and migration of data from non-virtualization to the virtualized environment.
- Utilize network-level storage subsystem-independent data replication services to satisfy backup and disaster recovery requirements.
- This course lecture offering is at the Storwize V7000 V7.6. level.

# Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This intermediate course is for individuals who assess or plan to deploy the IBM Storwize V7000 and leverage storage network virtualization solutions.

#### Voraussetzungen

# **Prerequisites**

You should have completed:

- Introduction to Storage (SS01G)
- Storage Area Networking Fundamentals (SN71G)

or equivalent knowledge

You should:

• Have a basic understanding of concepts associated with open systems, disk storage systems, and I/O operations.

# **Trainingsprogramm**

# **Course Outline**

#### Day 1

#### Welcome

Unit 1: Introduction to IBM Storwize V7000

Unit 2: Storwize V7000 hardware architecture

Unit 3: Storwize V7000 planning and zoning requirements

Unit 4: Storwize V7000 system initialization and user authentication

Unit 5: Storwize V7000 storage provisioning

Exercise 1: Storwize V7000 system initialization

Exercise 2: Storwize V7000 system configuration

Exercise 3: Configure user authentication

Exercise 4: Provision internal storage

Exercise 5: Examine external storage resources

#### Day 2

#### Review

Unit 6: Storwize V7000 host and volume allocation

Unit 7: Spectrum Virtualize advanced features

Exercise 6: Managing external storage resources

Exercise 7: Host definitions and volume allocations

Exercise 8: Access storage from Windows and AIX

Exercise 9: Hybrid pools and Easy Tier

Exercise10: Access Storwize V7000 through iSCSI host

#### Day 3

#### Review

Unit 8: Spectrum Virtualize data migration

Unit 9: Spectrum Virtualize Copy Services: FlashCopy

Unit 10: Spectrum Virtualize Copy Services: Remote Copy

Exercise 11: Volume dependencies and tier migration

Exercise 12: Reconfigure internal storage: RAID options

Exercise 13: Thin provisioning and volume mirroring

Exercise 14: Migrate existing data: Import Wizard

#### Day 4

Review

Unit 11: Storwize V7000 administration management

Exercise 15: Copy Services: FlashCopy and consistency groups

Exercise 16: User roles and access

Exercise 17: Migrate existing data: Migration Wizard

Exercise 18: Easy Tier and STAT analysis

Class review and evaluation

# **Objective**

After completing this course, you should be able to:

Outline the benefits of implementing an Storwize V7000 storage virtualization solution.

Differentiate between the Storwize V7000 2076-524 control enclosure and the 2076-312/324 expansion enclosure models.

Outline the physical and logical requirements to integrate the Storwize V7000 system solution.

Implement the Storwize V7000 GUI and CLI system setup to configure the V7000 systems.

Summarize the symmetric virtualization process to convert physical storage into virtual storage resources.

Implement volume allocations and map volumes to SAN attached host systems.

Summarize the advanced system management strategies to maintain storage efficiency, enhance storage performance and reliability.

Employ data migration strategies to the virtualized Storwize V7000 system environment.

Implement Copy Services strategies to managed Storwize V7000 system environment remotely

Employ administration operations to maintain system ability.

# **Schulungsmethode**

# **Live Online Training**

29. Aug 2023 bis 1. Sep 2023



# IBM SSF0G - IBM DS8000 Implementation Workshop for Open Systems ∠ Live Online oder Präsenz

Dauer : 32h00 Nr. : 30136

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course is designed to help you understand, install, and monitor the DS8000 for the Open Systems environment. The exercises enable you to perform a step-by-step implementation.

# Wer sollte teilnehmen:

### **Zielgruppe**

### **Audience**

This intermediate course is for System administrators and technical personnel who need to install a DS8000 in their environment.

### Voraussetzungen

# **Prerequisites**

Recommended:

Introduction to Storage - (SS01G)

Planning and Implementation a SAN - (SN71G)

More details are available at www.ibm.com/training

# **Trainingsprogramm**

### **Course Outline**

#### Day 1

- Welcome and introduction
- Unit 1: IBM DS family, DS8000 overview
- Unit 2: Architecture and hardware overview
- Unit 3: Virtualization concepts

#### Day 2

- Unit 4: DS command-line interface (DS CLI)
- Unit 5: DS8000 Storage Manager GUI
- Unit 6: Host system attachment
- Exercise 0: Lab setup and preliminary instructions
- Exercise 1: DS8000 DS CLI: Installation and configuration
- Exercise 2: DS8000 DS CLI: DDMs, array sites, arrays, ranks, and extent pools
- Exercise 3: Windows Server preparation

#### Day 3

- Exercise 4: Windows Server attachment to the DS8000
- Exercise 5: AIX Server attachment to the DS8000
- Exercise 6: DS8000 Storage Manager: Arrays, ranks, and extent pools
- Exercise 7: DS8000 Storage Manager: FB volumes, volume groups, and hosts
- Exercise 8: DS8000 Storage Manager: Other functions
- Exercise 9: DS8000 Easy Tier: Dynamic Volume Relocation
- Exercise 10: DS8000 Easy Tier: Dynamic Extent Pool Merge

#### Day 4

- Unit 7: Performance, tuning, and monitoring
- Unit 8: Business Continuity: Copy Services
- Unit 9: Summary
- Exercise 11: DS8000 Storage Manager: Thin provisioning
- Open lab sessions

### **Objective**

Recall the DS8000 models and features

Remember the architecture and hardware associated with the DS8000

Classify the DS8000 virtualization concepts

Summarize the DS8000 DS8000 command-line interface

Summarize the DS8000 graphical user interface

List the Copy Services features

Classify the features associated with performance, tuning, and monitoring

List the steps required to configure the DS8000 for Open Systems environment

Recognize the IBM DS8000 solutions for Business Continuity

### **Schulungsmethode**

# **Live Online Training**

30. Mai 2023 bis 2. Jun 2023



# IBM SSF1G - IBM DS8000 Implementation Workshop for z Systems ∠ Live Online oder Präsenz

Dauer: 24h00 Nr.: 30252

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

To learn the DS8000 storage subsystem and its hardware components and logical structure. You configure the DS8000 storage subsystem using a DS8000 Storage Manager GUI and review the DS CLI interface for scripting configuration functions. You will also perform dynamic data relocation using Easy Tier function. In addition we have a unit on the recently announced product called the DS8900F.

# Wer sollte teilnehmen:

### **Zielgruppe**

### **Audience**

This course is for system administrators, architects, and storage specialists. Anyone who needs to learn about DS8000 implementation and experiment with them on a real test configuration.

#### Voraussetzungen

### **Prerequisites**

You should have completed:

- Introduction to Storage (SS01G)
- An understanding of DASD and data sets and how clients hosts access directly or through FICON channels.

# **Trainingsprogramm**

### **Course Outline**

Day 1

Welcome

Unit 1: Concepts and architecture

Unit 2: Concepts of virtualization

Unit 3: DS Command Line Interface

Exercise 0: Lab setup and preliminary instructions

Exercise 1: DS8000 DS CLI: Installation and configuration

Exercise 2: DS8000 DS CLI: DDMs, array sites, arrays, ranks, and extent pools

Exercise 3: DS8000 DS CLI: LCU, CKD volumes, and PAVs

Day 2

Unit 4: DS8000 Storage Manager GUI

Exercise 4: DS8000 Storage Manager: Arrays, ranks, and extent pools Exercise 5: DS8000 Storage Manager: LCU, CKD volumes, and PAVs Exercise 6: DS8000 Storage Manager: I/O ports configuration

Exercise 7: DS8000 Storage Manager: Other functions

Exercise 8: DS8000 Easy Tier: Dynamic volume relocation

Day 3

Exercise 9: DS8000 Easy Tier: Dynamic pool merge

Unit 5: Host attachment

Unit 6: Performance, tuning, and monitoring

Unit 7: Business continuity

Unit 8: DS8900F Introduction

# **Objective**

Using the history, hardware & software features, functions, and components of the DS8000 family determine the architecture of the DS8880

Distinguish those elements that contribute to virtualization and the DS8880

Carry out those steps needed to configure the DS8880, using the Data Storage Command Line Interface (DS CLI) Carry out those steps needed to configure the DS8880, using the data storage Graphical User Interface (GUI) Outline those benefits of host attachments that will enable higher throughput and lower response times when connecting a DS8880 to your z System

Clarify the features of cache, performance identification, and TPC and their contributions to the physical and logical setup of the DS8880

Relate those functions of copy services, flash copy, and global mirroring to business continuity

Summarize the features and functions of the DS8900F

Distinguish the benefits of the three DS8900F models

# **Schulungsmethode**

# **Live Online Training**

6. Jun 2023 bis 8. Jun 2023



# IBM SSFS1G - IBM Flash Storage Fundamentals

🙎 Live Online oder Präsenz

Dauer: 1 Tag (1 Stunde) Nr.: 30090

Preis: 850,00 € netto 1.011,50 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

Enterprise data is growing exponentially. This data explosion is making commonly accepted practices of data management inadequate. Social, mobile, cloud, big data, and analytics are driving an explosion in data volumes and causing new challenges for data protection, disaster recovery, regulatory requirements, and standards for compliance. Data management has become one of the highest priorities of organizations today.

The IBM FlashSystem products are designed to help companies improve performance and reduce server sprawl, power consumption, cooling, and floor space requirements. All of this in turn can help clients save money, improve performance, and invest more in innovation. The IBM FlashSystem family can help you take control of your storage, harness existing data, and manage your IT infrastructure in a much more cloud-like fashion. This course will aim to provide the basics of flash storage systems, specifically IBM's portfolio in this area.

### Wer sollte teilnehmen:

### **Zielgruppe**

### **Audience**

Enrollment in this course is not restricted. Typical students may include:

- Customers
- Technical IBM personnel
- IBM Business Partner technical personnel
- IT consultants and architects

### Voraussetzungen

# **Prerequisites**

You should have a basic understanding of concepts associated with open systems disk storage systems and I/O operations.

You may want to consider taking:

Introduction to Storage (SS01G)

# **Trainingsprogramm**

### **Course Outline**

Course Administration and Introduction

Unit 1: An Overview of Flash Storage

Unit 2: IBM Flash Storage Portfolio

Unit 4: IBM FlashSystem 900

Video demonstrations

- Video 1 Monitoring
- Video 2 User Management
- Video 3 Create Pools
- Video 4 WIN Host Attachment
- Video 5 Red Hat Enterprise Linux integration with IBM FlashSystem
- Video 6 Thin Provisioning & Volume Mirroring

# **Objective**

Demonstrate an understanding of flash storage from a technology standpoint

Summarize the benefits of IBM FlashCore technology

Recognize all the flash storage products from IBM and their benefits

Summarize the architecture of IBM FlashSystem products, including Spectrum Virtualize, and the FlashSystem 900 offerings

Demonstrate an ability to access and interact with the graphical interface of an IBM Spectrum Virtualize FlashSystem.

Summarize the various use cases of each of the FlashSystem products

# Schulungsmethode

# **Live Online Training**

9. Jun 2023

10. Nov 2023



# IBM SSFS3G - IBM FlashSystem V9000 Storage Implementation

🙎 Live Online oder Präsenz

Dauer : 32h00 Nr. : 30368

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

IBM FlashSystem V9000 is a comprehensive all-flash enterprise storage solution that delivers the full capabilities of IBM FlashCore technology. FlashSystem V9000 offers a rich set of storage virtualization features designed to improve efficiency, management, scalability and flexibility for any storage environments. FlashSystem V9000 delivers industry-leading value to enterprises along three dimensions: Scalable Performance, Enduring Economics, and Agile Integration.

This course focuses on the planning and implementation tasks associated with integrating the FlashSystem V9000 into the storage area network, and facilitate storage application data access independence from storage management functions and requirements.

It also explains how to:

- Centralize storage provisioning to host servers from common storage pools using internal storage and SAN attached external heterogeneous storage.
- Improve storage utilization effectiveness using Thin Provisioning and Real-Time Compression
- Implement storage tiering and optimization of flash, enterprise or nealine systems usage with Easy Tier.
- Facilitate the coexistence and migration of data from non-virtualization to the virtualized environment.
- Utilize network-level storage subsystem-independent data replication services to satisfy backup and disaster recovery requirements.

# Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This lecture and exercise-based course is for individuals who are assessing and/or planning to deploy IBM System Storage networked storage virtualization solutions. Typical students may include:

- Customers
- Technical IBM personnel
- · Business Partner technical personnel
- IT consultants and architects

#### Voraussetzungen

### **Prerequisites**

- An understanding of the basic concepts of open systems disk storage system and I/O operations we recommend the following:
- Foundations of Storage (SS00DG) or
- Introduction to Storage (SS01G) and
- IBM Flash Storage Fundamentals (SSFS1G / SSFS1WG)

# **Trainingsprogramm**

# **Course Outline**

#### Day 1

WelcomeUnit 1: IBM FlashSystem V9000 IntroductionUnit 2: Emergence of flash storageUnit 3: IBM FlashCore technologyUnit 4: IBM FlashSystem V9000 hardware architectureUnit 5: FlashSystem V9000 installation and configurationUnit 6: IBM Spectrum Virtualize RAID protectionExercise 0: Lab environment overviewExercise 1: System user authenticationExercise 2: Provisioning internal storage

#### Day 2

Unit 7: FlashSystem V9000 storage provisioningUnit 8: IBM Spectrum Virtualize host integrationUnit 9: IBM Spectrum Virtualize volume allocationUnit 10: IBM Spectrum Virtualize data reduction technologiesUnit 11: IBM Spectrum Virtualize Easy TierExercise 3: Managing external storage resourcesExercise 4: Windows host definitions and volume allocationsExercise 5: AIX host definitions and volume allocationsExercise 6: Linux host definitions and volume allocationsExercise 7: Thin Provision and Volume MirroringExercise 8: Easy Tier Hybrid pool implementation

#### Day 3

Unit 12: IBM Spectrum Virtualize data migrationUnit 13: IBM Spectrum Virtualize FlashCopy and Consistency groupsUnit 14: IBM Spectrum Virtualize Transparent Cloud TieringExercise 9: Easy Tier and STAT analysisExercise 10: V9000 data pool migrationExercise 11: Migrate existing data with Import Wizard GUIExercise 12: Migrate existing data with Migration Wizard

#### Day 4

Unit 11: IBM Spectrum Virtualize remote data replicationUnit 16: IBM Spectrum Virtualize administration managementExercise 13: Migrate existing data with Import Wizard CLIExercise 14: Real-time Compression and IBM ComprestimatorExercise 15: FlashCopy and consistency groupsExercise 16: FlashCopy snapshot monitoring user roles and accessExercise 19: Snapshot to the CloudClass review and evaluation

### Objective

After completing this course, you should be able to:

- Summarize the units associated with this course.
- Recall the history and fundamentals for IBM FlashSystem storage.
- Distinguish the core principles of the IBM FlashCore Technology.

- Classify the characteristics and components of the IBM FlashSystem V9000 storage system.
- Outline the physical and logical planning requirements to setup and configure a FlashSystem system environment.
- Summarize the symmetric virtualization process converting IBM MicroLatency modules to storage resources.
- Recall the process to create host access storage on the IBM FlashSystem V9000.
- Determinate the advanced software features designed to simplify data management, improve data security, and preserve storage investments.
- Interpret the process in which to migrate data to and from the virtualized FlashSystem V9000 system environment.
- Recall the administrative functions and maintenance procedures to centralize the management and servicing of IBM FlashSystem V9000 storage resources.

# Schulungsmethode

# **Live Online Training**

13. Jun 2023 bis 16. Jun 2023



# IBM TSP12G - IBM Spectrum Protect Plus 10.1.6 - Implementation and Administration

Live Online oder Präsenz

Dauer: 24h00 Nr.: 30416

Preis : 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

In this three-day course, you learn how to install, configure and administer IBM Spectrum Protect Plus v10.1.6. You begin with a review of the software capabilities, requirements, and architecture. Then, through lecture and hands-on labs, you learn how to perform the various tasks required to configure the environment on an installed virtual appliance. You customize SLA policies and make use of available options to protect virtual machines and applications, as well as the IBM Spectrum Protect Plus catalog. You monitor and manage jobs, plan and prepare for disaster recovery, view log files, and create custom reports.

# Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

Implementers and administrators who are protecting virtual environments and applications

Voraussetzungen

# **Prerequisites**

- Windows and Linux system administration
- Storage concepts

# **Trainingsprogramm**

# **Course Outline**

- Unit 1: IBM Spectrum Protect Plus introduction
- Unit 2: Installation and configuration
- · Unit 3: Data protection for virtual machines

- Unit 4: Application protection
- Unit 5: Container protection and EC2 snapshots
- Unit 6: Disaster recovery and long-term retention
- Unit 7: Operations and troubleshooting

# Objective

- Describe features and functions, and use the sizer tool
- Install and configure the server, vSnap, VADP proxy, and configure SLA Policies
- Protect hypervisors and their virtual machines
- Protect applications and databases
- Protect data in containers and on physical systems
- Copy data for long-term retention and disaster recovery
- Manage daily operations and troubleshooting

# Schulungsmethode

# **Live Online Training**

26. Jun 2023 bis 28. Jun 2023

30. Aug 2023 bis 1. Sep 2023

30. Aug 2023 bis 1. Sep 2023

3. Okt 2023 bis 5. Okt 2023



# IBM ZL00G - z/VM and Linux on IBM Z and LinuxONE Bootcamp

🙎 Live Online oder Präsenz

Dauer: 40h00 Nr.: 30099

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course introduces the system programmer to the tasks required to support a z/VM operating system. It gives an overview of the processes that are required to install z/VM, and to do the required tailoring steps to support guest operating system virtual machines and CMS users. The students will leave the course with the knowledge to do the steps for adding guest systems and other virtual machines to the z/VM system, to apply service to the z/VM system, and to define a minimal TCP/IP configuration. Also, this course is designed to teach the implementation of SUSE, RedHat, and Ubuntu distributions of Linux on IBM Z and on LinuxONE.

### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This course is intended for IT professionals who will be responsible for the support of guests and other virtual machines that run in the z/VM environment. It assumes that these persons have little or no experience in the z/VM environment. Also, this course is intended for anyone responsible for installing, customizing, and maintaining Linux on IBM Z and on LinuxONE.

### Voraussetzungen

# **Prerequisites**

Basic computer skills and knowledge.

# **Trainingsprogramm**

### **Course Outline**

Day 1

- Welcome
- Unit 1: z/VM and zLinux overview
- Unit 2: Installation
- Exercise 1: z/VM logon overview
- Exercise 2: z/VM installation

#### Day 2

- Unit 3: Directory
- Exercise 3: z/VM directory maintenance
- Unit 4: CP system configuration
- Exercise 4: CP system configuration

#### Day 3

- Unit 5: z/VM networking
- Exercise 5: z/VM networking
- Unit 6: VMSES/E
- Exercise 6: Servicing z/VM (VMSES/E)
- Unit 7: Installing SUSE Linux on System z

#### Day 4

- Exercise 7: SUSE Linux lab overview
- Exercise 8: SUSE Linux installation on System z
- Unit 8: Installing additional packages
- Exercise 9: SUSE Linux basics
- Exercise 10: SUSE installing additional packages

#### Day 5

- Unit 9: Network connectivity
- Exercise 11: SUSE Linux networking
- Unit 10: System management
- Exercise 12: SUSE Linux system management
- Unit 11: Backup and recovery
- Exercise 13: SUSE Linux TSM client
- Unit 12: z/VM Performance Toolkit configuration
- Exercise 14: z/VM Performance Toolkit configuration

# **Objective**

After completing this course, you should be able to:

Describe the process of running guests under z/VM

Describe the z/VM installation process on IBM Z and LinuxONE

Define virtual machines to z/VM and reload the directory

Customize the CP component of the z/VM system

Customize the TCP/IP files on z/VM

Describe the Linux installation process on z/VM for SUSE, RedHat, and Ubuntu

Apply service to the z/VM system

Describe the system management process for Linux on IBM Z and LinuxONE

Describe backup and recovery procedures for Linux on IBM Z and LinuxONE

Manage and update network connectivity issues for Linux on IBM Z and LinuxONE

Implement the z/VM Performance Toolkit

# Schulungsmethode

# Live Online Training

31. Jul 2023 bis 4. Aug 2023

6. Nov 2023 bis 10. Nov 2023



# IBM TD-SM927G - System Automation for z/OS 4.1 Operations

Live Online oder Präsenz

Dauer : 28h00 Nr. : 30479

Preis: 3.200,00 € netto 3.808,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

This course introduces and explains the System Automation for z/OS® (SA z/OS) commands that are used for system operations. In this course, the System Automation for z/OS automation manager and automation agent run in a z/OS 2.2 environment. The automation platform, Tivoli® NetView for z/OS is at version 6 release 2. The course uses several automation scenarios in single and multisystem configurations to demonstrate the concepts that are taught in the lessons. This training class is delivered in an environment with multiple opportunities for hands-on lab exercises.

### Wer sollte teilnehmen:

### **Zielgruppe**

### **Audience**

Users of IBM System Automation for z/OS and for IBM Automation Control for z/OS, especially operators, administrators, and system programmers.

# Voraussetzungen

### **Prerequisites**

SM917 - IBM System Automation for z/OS 4.1 Architecture Basic z/OS operations skills Basic NetView skills helpful

# **Trainingsprogramm**

### **Course Outline**

- Introduction to System Automation for z/OS (level set only)
- Initialization
- · Commands and operations

- Application groups
- Application monitoring
- Centralized operations
- Troubleshooting

# **Objective**

When you complete this course, you can use IBM System Automation for z/OS 4.1 or IBM Automation Control for z/OS to perform the following tasks:

- Start and stop automated resources
- Monitor and control automated resources
- IPL and shut down systems and an SAplex

# Schulungsmethode

# **Live Online Training**

30. Mai 2023 bis 2. Jun 2023



# IBM TD-SM937G - IBM System Automation for z/OS 4.1 Implementation and Administration

A Live Online oder Präsenz

Dauer: 40h00 Nr.: 30478

Preis : 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

### **Overview**

In this course, you learn how to define automation policy for IBM System Automation for z/OS® (SA z/OS). You learn how to create policy definitions for systems, applications, application groups, and monitor resources. This is delivered in an environment with multiple opportunities for hands-on lab exercises. You define automation policy for several environments: single system and multiple system within a basic sysplex. The System Automation for z/OS automation manager and automation agent run in a z/OS 2.2 environment. The automation platform, Tivoli® NetView for z/OS is at version 6 release 2.

### Wer sollte teilnehmen:

#### **Zielgruppe**

### **Audience**

This intermediate course is primarily intended for system administrators and system analysts who are responsible for defining the automation policy that is used by System Automation for z/OS.

#### Voraussetzungen

### **Prerequisites**

Before taking this course, you should have attended the following courses or have equivalent skills:

- •SM917 IBM System Automation for z/OS 4.1 Architecture
- •SM927 IBM System Automation for z/OS 4.1 Operations

You should have the following skills:

- •Good knowledge of System Automation for z/OS architecture and concepts
- Basic knowledge of System Automation for z/OS operations
- •Basic z/OS operations skills and started task concepts

- Basic NetView skills
- •Basic ISPF use
- •JCL coding and z/OS data set allocation

Recommended NetView courses before this course are:

- •TZ203 IBM Tivoli NetView for z/OS 6.1 Fundamentals
- •TZ213 IBM Tivoli NetView for z/OS 6.1 Automation

# **Trainingsprogramm**

### **Course Outline**

System Automation for z/OS overview

Installation and customization

Customization Dialog and Policy Data Base

Defining Applications and building automation configuration files

Additional customization: explore features and functions including use of symbolics in the policy, Application classes, suspend file, Notify Operators, Service Periods, Events, Triggers, and monitor resources

Initialization and runmodes

Gateways and Status Display Facility

**Defining Application Groups** 

End-to-end automation: extend automation to cross-sysplex and to true end-to-end cross platform automation. Use the Universal Automation Adapter to automate resources on distributed systems, for instance running on Linux Performance-based automation with OMEGAMON

Migration and coexistence with previous releases of SA z/OS

# **Objective**

- System Automation for z/OS overview
- Installation and customization
- Customization Dialog and Policy Data Base
- Defining Applications and building automation configuration files
- Additional customization: explore features and functions including use of symbolics in the policy, Application classes, suspend file, Notify Operators, Service Periods, Events, Triggers, and monitor resources
- Initialization and runmodes
- Gateways and Status Display Facility
- Defining Application Groups
- End-to-end automation: extend automation to cross-sysplex and to true end-to-end cross platform automation.

  Use the Universal Automation Adapter to automate resources on distributed systems, for instance running on Linux
- Performance-based automation with OMEGAMON
- Migration and coexistence with previous releases of SA z/OS

### Schulungsmethode

# **Live Online Training**

10. Apr 2023 bis 14. Apr 2023

29. Mai 2023 bis 2. Jun 2023



# IBM TD-ES05G - An Introduction to the z/OS Environment

🙎 Live Online oder Präsenz

Dauer : 16h00 Nr. : 30477

Preis: 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

# **Overview**

This course is an overview of the z/OS operating systems and services for non-MVS IS technical personnel.

# Wer sollte teilnehmen:

### Zielgruppe

# **Audience**

This basic course is for personnel with a technical background in information technology who are new to the z/OS platform and do not have prior MVS or OS/390 experience.

### Voraussetzungen

# **Prerequisites**

You should have:

- System concepts
- Basic knowledge of IS technologies
- No MVS, OS/390, or z/OS knowledge required

### **Trainingsprogramm**

# **Course Outline**

Day 1

- Welcome
- Unit 1: Requirements of an enterprise server
- Unit 2: Application enablement

- Unit 3: Enabling On Demand Business on z/OS
- Unit 4: z/OS connectivity

#### Day 2

- Unit 5: Security in a z/OS environment
- Unit 6: Systems management
- Unit 7: System and data availability
- Unit 8: System services
- Unit 9: System z9 and z10 and System z hardware
- Unit 10: zEnterprise: A new dimension in computing

# **Objective**

- Identify the installation requirements for an enterprise server and how z/OS supports these requirements
- Discuss the services for application enablement in a z/OS environment
- Identify how z/OS provides support for On Demand Business
- Describe how security is ensured in a z/OS environment
- Identify products and tools that support a central point of control
- Characterize products and facilities that support z/OS systems
- Describe the essential system services of z/OS
- List the z/Architecture processor configurations for z/OS
- Describe z/OS connectivity, communication facilities, and interfaces
- Describe how zEnterprise creates a single system of systems
- The concept, strategy, and benefits of the z/OS environment
- Application enablement in z/OS
- Overview of On Demand Business support in z/OS
- Connectivity to the z/OS environment
- Security support provided by z/OS
- Systems Management support (Tivoli, SMP/E, SMF, and RMF)
- Scalability, availability, backup, and recovery features in z/OS
- System Services support (storage management, job management, work management, data sets, and data set management)
- System z processor configurations, System z Enterprise Server hardware
- zEnterprise, a new dimension in computing

# **Schulungsmethode**

# **Live Online Training**

31. Mai 2023 bis 1. Jun 2023



# IBM TD-SM917G - IBM System Automation for z/OS 4.1 Architecture ∠ Live Online oder Präsenz

Dauer : 20h00 Nr. : 30476

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket : Auf Anfrage

### **Overview**

This course introduces and explains the System Automation for z/OS (SA z/OS) components, architecture, and concepts. Focus is on the System Operations component with Processor Operations as an optional topic. It is a prerequisite for attending the operations or admin classes.

This course does not include labs.

For information about other related courses, see the IBM Security Systemseducation training paths website:

# Wer sollte teilnehmen:

#### Zielgruppe

# **Audience**

This course is designed for users of IBM System Automation for z/OS, especially operators, administrators, and system programmers. It is the required prerequisite course of all other IBM System Automation for z/OS courses and should be attended first.

### Voraussetzungen

# **Prerequisites**

Before taking this course, you should have basic skills in z/OS and NetView. You should also complete these courses:

- IBM Tivoli NetView for z/OS 6.1 Fundamentals (TZ203G)
- IBM Tivoli NetView for z/OS 6.1 Automation (TZ213)

### **Trainingsprogramm**

### **Course Outline**

IBM System Automation for z/OS 4.1 architecture

Architecture and concepts

Details

Processor operations

### **Objective**

The learning objectives are to get the required knowledge to attend the System Automation for z/OS operations or admin classes:

Purpose and features

Major components

Architecture and design of the System Operations component

Policy-based automation and concepts

Goal-driven automation

#### xxxxxxxxxxx

Describe the IBM System Automation for z/OS 4.1 Architecture

Describe the components of the product

Describe the product's automation capabilities

Describe policy-based and goal-driven automation

Describe the automation agent role and operation

Describe the automation manager role and operation

Explain the key automation concepts

Describe goal-driven automation

Explain the automation statuses and their effect on automation

Describe automation policy for applications

Describe resource dependencies and relationships

Provide an overview of application groups

Explain automation flags, threshold processing, and notify operators

Explain threshold processing for major and minor resources

List transient resource automation

List MVS automation

Describe resource relationships details

Explain the request process

List and describe factors that can influence goal-driven automation

List types and natures of application groups

Explain behavior or attributes of application groups

Describe architecture including implementation options

Explain usage and operator interface

Describe automation policy

# **Schulungsmethode**

# **Live Online Training**

29. Mai 2023 bis 30. Mai 2023



# IBM TD-ES85G - Advanced z OS Performance: WLM, Sysplex, UNIX Services, z Systems

Live Online oder Präsenz

Dauer : 36h00 Nr. : 30475

Preis : 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Today, z/OS supports new workloads running as e-business servers, including the IBM Hypertext Transfer Protocol (HTTP) server and WebSphere. These workloads exploit the latest features of the z/OS runtime environments, including Parallel Sysplex, Workload Manager (WLM), and UNIX System Services (USS). New hardware technology, such as zAAP and zIIP processors, can be exploited for selected workloads, and the WLM Intelligent Resource Director balances workloads across clustered LPARs in a sysplex.

Examine the performance management and monitoring components of the Parallel Sysplex, USS, and WLM environment using extensive Resource Management Facility (RMF) reports and console displays to understand what is happening in the system. Based on this foundation, analyze case studies using z/OSMF Workload Management and Resource Monitoring functions to show how integrated performance data gatherers for Linux on System z/x, AIX, and Windows systems can be used to provide a consistent monitoring solution for zEnterprise ensembles.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This advanced course is for z/OS systems programmers, experienced performance analysts and performance administrators, UNIX Services support personnel, and other experienced I/S professionals who want to update their RMF and performance management skills to include the latest z/OS e-business and zEnterprise ensemble runtime environments.

#### Voraussetzungen

#### **Prerequisites**

A working knowledge of the z/OS operational environment is assumed, including a basic knowledge of WLM, UNIX System Services, and Parallel Sysplex. Previous experience or training in z/OS measurement and tuning and RMF are also assumed. Such training can be obtained by attending course: Basic z/OS Tuning Using the Workload Manager

#### **Trainingsprogramm**

#### **Course Outline**

#### Day 1

- Welcome
- Unit 1: z/OS advanced performance overview Unit 2: Tuning Parallel Sysplex
- Exercise 1: Introduction to your system Exercise 2: Tuning Parallel Sysplex

#### Day 2

- Unit 3: Workload Manager and performance
- Unit 4: zAAPs and zIIPs: Specialty processors
- Unit 5: Monitoring and tuning UNIX System Services

#### Day 3

- Unit 5: Monitoring and tuning UNIX System Services (continued)
- Exercise 3: USS batch performance Exercise 4: USS classification
- Unit 6: Advanced Workload Management and Resource Monitoring functions
- Exercise 5: z/OSMF and performance management

#### Day 4

- Exercise 5: z/OSMF and performance management (continued)
- Unit 7: zEnterprise Platform Performance Management
- Exercise 6: Cross platform monitoring with RMF XP

#### Objective

- Describe the advanced performance components of current complex z/OS environment and identify the major performance factors for these components
- Identify coupling facility (CF) technologies and how they function in a Parallel Sysplex, including CF links and CF structures
- Monitor and analyze the service times and other performance indicators of the CF and other Parallel Sysplex components, including cross-system coupling facility (XCF)
- Predict and monitor effects of system managed CF duplexing on system performance
- Identify WLM services and their use by z/OS applications, including enclave services, routing services, and application environments
- Evaluate RMF enclave reports and understand enclave resource accounting
- Implement and control WLM optional features such as Intelligent Resource Director (IRD) and WLM defined capacity, and monitor LPAR performance when optimized by these features
- Describe the new functionality introduced by zAAP and zIIP specialty processors on z/OS systems and use appropriate tools to control and monitor specialty CP workload performance
- Monitor and control the USS program environment using RMF reports and System Management Facility (SMF) data along with USS console commands and displays
- Tune USS resource usage, shell performance, and file system performance for Hierarchical File System (HFS) and zFS
- · Configure WLM's management of the USS environment, including BPXAS and classification of USS workloads
- Describe the purpose of the Unified Resource Manager and the various system layers that it can work across

- Describe what workload resource groups or workloads mean within the zEnterprise environment
- Describe what performance management capabilities Unified Resource Manager provides
- Describe the role Guest Platform Management Provider and Application Resource Measurement technologies play in the zEnterprise environment
- Explain how zEnterprise technologies cooperate with z/OS Workload Manager (WLM)
- Describe Unified Resource Manager performance functions
- Know how to use RMF XP the solution for Cross Platform Performance Monitoring (z/OS and distributed platforms)
- Use RMF XP for monitoring all operating systems running on the IBM
- zEnterprise Blade center Extension

# Schulungsmethode

# **Live Online Training**

29. Mai 2023 bis 2. Jun 2023

12. Jun 2023 bis 16. Jun 2023



#### IBM TD-AN10G - AIX Basics

🙎 Live Online oder Präsenz

Dauer : 24h00 Nr. : 30474

Preis: 4.000,00 € netto 4.760,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course enables you to perform everyday tasks using the AIX operating system. Learn to perform everyday tasks using the AIX operating system.

This course provides lectures and hands on labs in an instructor lead course environment, either in a face-to-face classroom or in a live virtual classroom environment (ILO - Instructor Led Online). The lab images are using the AIX 7.2 operating system.

#### Wer sollte teilnehmen:

#### Zielgruppe

#### **Audience**

This basic course is intended for anyone who requires basic AIX/UNIX user skills to be able to work in an AIX environment.

This course is also a prerequisite for many courses in the AIX Systems Administration curriculum.

#### Voraussetzungen

#### **Prerequisites**

You should be familiar with:

• Basic information technology (IT) concepts and the role of an operating system

#### **Trainingsprogramm**

#### **Course Outline**

Day 1

Welcome Unit 1: Getting started with AIX Exercise 1: Getting started with AIXUnit 2: Files and directories Exercise 2: Files and directories Unit 3: The vi editor Exercise 3: The vi editor

Day 2Unit 4: Using files Exercise 4: Using files Unit 5: File permissions Exercise 5: File permissions Unit 6: Shell basics Exercise 6: Shell basics Unit 7: Using shell variables Exercise 7: Using shell variables Unit 8: Processes

Day 3Exercise 8: Processes Unit 9: Customizing the user environment Exercise 9: Customizing the user environment Unit 10: AIX utilities: Part I Exercise 10: AIX utilities: Part 1Unit 11: AIX utilities: Part 2Exercise 11: AIX utilities: Part 2

Wrap-up/Survey

# **Objective**

- Log in to an AIX system and set a user password
- Use AIX online documentation
- Manage AIX files and directories
- Describe the purpose of the shell
- Use the vi editor
- Execute common AIX commands and manage AIX processes
- Customize the working environment
- Use common AIX utilities
- Write simple shell scripts

#### **Schulungsmethode**

# **Live Online Training**

24. Apr 2023 bis 26. Apr 2023

10. Jul 2023 bis 12. Jul 2023

#### Hamburg

27. Jun 2023 bis 29. Jun 2023

#### Leinfelden-Echterdingen

27. Jun 2023 bis 29. Jun 2023

#### München

1. Nov 2023 bis 3. Nov 2023



# IBM ESS10G - Pervasive Encryption on z/OS

🙎 Live Online oder Präsenz

Dauer: 24h00 Nr.: 30146

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

Organizations are compelled to find effective and cost-efficient data security solutions.

Encryption is one of the technologies that enables organizations to reduce the cost, impact and even likelihood of a breach. Encrypting data can help companies meet the stringent mandates of the GDPR, HIPAA and other mandates.

IBM z15 has been designed for pervasive encryption, enabling organizations to encrypt 100% of an organization's IBM Z critical business data in-flight and at-rest, with no application changes and no impact to SLAs. Encrypting only the data required to meet compliance mandates should be considered a minimum threshold, not a best practice. IBM z15 makes pervasive encryption the new standard in data protection and the foundation of a larger data security and protection strategy.

z/OS is designed to provide new policy-based encryption options that take full advantage of the improvements in the z15 platform. These new capabilities include:

Data set encryption, which is one aspect of pervasive encryption, provides enhanced data protection for many z/OS data sets gives users the ability to encrypt data without needing to make changes to applications to embed encryption APIs within applications.

New z/OS policy controls which make it possible to use pervasive encryption to protect user data and simplify the task of compliance for many z/OS data sets, zFS file systems, and Coupling Facility structures.

Pervasive encryption for IBM Z® is a consumable approach to enable extensive encryption of data in-flight and at-rest to substantially simplify encryption and reduce costs associated with protecting data.

In this course you will learn how to implement Pervasive Encryption in your z/OS installation. The course explores in detail, the various technologies that are involved in z System and z/OS Cryptographic Services, ICSF, RACF and DFSMS access method Services.

In the hands-on exercises, you begin with the setup of your hardware crypto environment (CCA crypto express and CPACF), then you will load and activate your AES master keys, setup ICSF and its Key datasets (CKDS PKDS TKDS), then define your data encryption keys, activate your data set encryption policy, and encrypt your data sets and zFS filesystems.

These exercises reinforce the concepts and technologies being covered in the lectures.

# Wer sollte teilnehmen:

#### Zielgruppe

#### **Audience**

This class is intended for z/OS system programmers and security specialists in charge of designing, implementing and monitoring Pervasive Encryption on z/OS.

#### Voraussetzungen

# **Prerequisites**

- General z/OS knowledge, including basic UNIX System Services skills
- Basic knowledge of RACF
- Curriculum relationship
  - o [ES66G]

# **Trainingsprogramm**

#### **Course Outline**

- Describe the components of Pervasive Encryption on z/OS
- Explain the role of encryption for data protection

2

- Implement hardware crypto on your z System
- Load and activate AES Master Keys
- Implement and start ICSF
- Understand the differences between secure keys clear keys and protected keys
- Describe how are key values used for encryption and decryption
- Generate, maintain and manage Keys

Setup access to key labels
Setup policy to supply key label (RACF SMS JCL)
Access data in encrypted data sets
Create encrypted data sets - Supplying key labels
Convert existing data sets to encryption
Verify encryption status
• Encrypt Data in Transit
• Encrypt Data at Rest
Manage data sets, data keys, and key labels
Objective
After completing this course, you should be able to:
Describe the components of Pervasive Encryption on z/OS
Explain the role of encryption for data protection
2
Implement hardware crypto on your z System
Load and activate AES Master Keys
Implement and start ICSF
Understand the differences between secure keys clear keys and protected keys
Describe how are key values used for encryption and decryption
Generate, maintain and manage Keys
Setup access to key labels

- Setup policy to supply key label (RACF SMS JCL)
- Access data in encrypted data sets
- Create encrypted data sets Supplying key labels
- Convert existing data sets to encryption
- Verify encryption status
- Encrypt Data in Transit
- Encrypt Data at Rest
- Manage data sets, data keys, and key labels

# Schulungsmethode

#### Leinfelden-Echterdingen

26. Jun 2023 bis 28. Jun 2023

# **Live Online Training**

26. Jun 2023 bis 28. Jun 2023

27. Nov 2023 bis 29. Nov 2023



# IBM H010G - IBM Spectrum LSF Basic Configuration and Administration for Linux

A Live Online oder Präsenz

Dauer: 24h00 Nr.: 30286

Preis : 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course teaches IBM Spectrum LSF 10.1 version.

The course is designed to give system administrators the knowledge required to implement and maintain LSF in their working environment. They will gain a solid understanding of workload resource management, cluster configuration and administration. The workshops provide valuable experience with the installation of LSF, cluster configuration and administration. The system administrator will also learn helpful hints and tips and develop fundamental troubleshooting skills.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

# **Audience**

System administrators who will implement the LSF cluster and who will be responsible for managing and administrating the LSF cluster.

#### Voraussetzungen

#### **Prerequisites**

You should:

- be familiar with UNIX/Linux
- and have basic UNIX/Linux system administration experience

No previous experience with IBM Platform products is assumed or required.

# **Trainingsprogramm**

#### **Course Outline**

LSF concepts and terminologyLSF installationJob submission and controlResource managementCluster query commandsLSF architectureLSF configurationLSF batch system configurationLSF scheduling policies and fairshare policiesResource limitsCluster managementBasic troubleshootingLSF debuggingIBM Spectrum LSF with EGOLSF application integration and deployment

# **Objective**

- Define concepts and terms use in IBM Spectrum LSF
- Install IBM Spectrum LSF
- Submit jobs in IBM Spectrum LSF
- Manage resources
- Use cluster query commands
- Describe IBM Spectrum LSF architecture and configuration
- Describe LSF scheduling policies
- Describe resources allocation limits
- Detail LSF cluster management
- Troubleshoot and debug IBM Spectrum LSF
- Describe and work with EGO
- Explain application integration and deployment

#### **Schulungsmethode**

#### Hamburg

7. Jun 2023 bis 9. Jun 2023

#### **Live Online Training**

7. Jun 2023 bis 9. Jun 2023

# Leinfelden-Echterdingen

7. Jun 2023 bis 9. Jun 2023

1. Nov 2023 bis 3. Nov 2023



New

# **IBM 8G102G - IBM Security Guardium Data Protection Foundations**Q Live Online oder Präsenz

Dauer: 24h00 Nr.: 30469

Preis : 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

IBM Security® Guardium® Data Protection (Guardium) supports a zero trust approach to security. It discovers and classifies sensitive data from across an enterprise, providing real time data activity monitoring and advanced user behavior analytics to help discover unusual activity around sensitive data.

Guardium provides a broad range of data security and protection capabilities that can protect sensitive and regulated data across environments and platforms. This course provides the foundational level processes, procedures, and practices necessary to configure Guardium to monitor and protect sensitive data. Hands-on exercises reinforce the skills learned.

\*Note: this course is based upon IBM Security® Guardium® Data Protection v11.4.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

Database administrators, security administrators, security analysts, security technical architects, and professional services using Guardium.

#### Voraussetzungen

#### **Prerequisites**

Before taking this course, make sure that you have the following skills:

- Working knowledge of SQL queries for IBM DB2 and other databases
- Working knowledge of NoSQL type databases
- Working knowledge of UNIX commands
- · Ability to use a UNIX text editor such as vi
- Familiarity with data protection standards such as HIPAA, PCI, GDPR, and SOX

#### **Trainingsprogramm**

#### **Course Outline**

Unit 1: Guardium overview

Unit 2: Guardium architecture

Unit 3: Guardium user interfaces

Unit 4: Access management

Unit 5: Guardium groups

Unit 6: System & data management

Unit 7: Guardium discovery & vulnerability assessment

Unit 8: Policy management

Unit 9: Guardium reporting

Unit 10: Guardium alerts

Unit 11: Audit process automation

#### **Objective**

- Identify the primary functions of IBM Security Guardium Data Protection
- Apply key Guardium architecture components
- Navigate the Guardium user interface and command line interface
- Manage user access to Guardium
- Build and populate Guardium groups
- Use system settings and data management tools to manage, configure and monitor Guardium resources
- Use database discovery and the Vulnerability Assessment application to perform data security tasks
- Configure policy rules that process the information gathered from database and file servers
- Create queries and reports to examine trends and gather data
- Use Guardium alerts to monitor a data environment
- Use Guardium audit process tools to streamline the compliance process

#### **Schulungsmethode**

# **Live Online Training**

5. Jun 2023 bis 7. Jun 2023

16. Aug 2023 bis 18. Aug 2023

22. Nov 2023 bis 24. Nov 2023



New

# IBM BQ204G - IBM QRadar SIEM Advanced Topics

🙎 Live Online oder Präsenz

Dauer: 16h00 Nr.: 30443

Preis: 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

QRadar SIEM provides deep visibility into network, user, and application activity. It provides collection, normalization, correlation, and secure storage of events, flows, assets, and vulnerabilities. Suspected attacks and policy breaches are highlighted as offenses.

This 2-day course walks you through various advanced topics about QRadar such as custom log sources, reference data collections and custom rules, X-Force data and the Threat Intelligence app, UBA and QRadar Advisor, tuning and custom action scripts. The course also discusses integration with IBM SOAR. Hands-on exercises reinforce the skills learned.

The lab environment for this course uses the IBM QRadar SIEM 7.4 platform.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This course is designed for security administrators and security analysts.

Voraussetzungen

#### **Prerequisites**

Students should be knowledgeable about the following topics:

- IT infrastructure
- IT security fundamentals
- Linux
- Windows

- TCP/IP networking
- Syslog
- Foundational skills for the IBM QRadar Security Intelligence Platform (at least the skills that are taught in the IBM QRadar SIEM Foundations BQ104 course)

# **Trainingsprogramm**

#### **Course Outline**

Unit 1: Custom log sources

Unit 2: Reference data collections and custom rules

Unit 3: IBM X-Force Threat Intelligence in QRadar

Unit 4: User Behavior Analytics and Advisor with Watson

Unit 5: Tuning

Unit 6: Custom action scripts

Unit 7: IBM SOAR integration

# **Objective**

- Learn how to create custom log sources
- Discover how to work with reference data collections and custom rules
- Use X-Force data and Threat Intelligence app
- Use the Use Case Manager app
- Learn how to use UBA and QRadar Advisor
- Discover Tuning
- Explore Custom action scripts
- Discuss Integration with IBM SOAR

# Schulungsmethode

# **Live Online Training**

8. Mai 2023 bis 9. Mai 2023 bis 9. Mai 2023 bis 9. Mai 2023 bis 9. Mai 2023 bis 27. Jun 2023

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17. Jul 2023 bis 18. Jul 2023 13. Nov 2023 bis 14. Nov 2023 11. Dez 2023 bis 12. Dez 2023



New

# **IBM TW108G - IBM Security Verify Access Foundations**

🙎 Live Online oder Präsenz

Dauer: 24h00 Nr.: 30440

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

IBM Security Verify Access\* helps you simplify your users' access while more securely adopting web, mobile, IoT, and cloud technologies. It can be deployed on premises, in a virtual or hardware appliance, or containerized with Docker. Verify Access also directly connects with Verify SaaS for a modernized, hybrid IAM approach to enable your organization's migration to identity as a service (IDaaS) at a comfortable pace. Using the skills taught in this course, you learn how to run Verify Access via Docker, configure authentication and authorization mechanisms, implement policy access control, and set up reverse proxy junctions to process web requests. Hands-on exercises reinforce the skills learned.

\*Note: this course is based upon IBM Security Verify Access v10.x.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

This course is designed for system administrators and implementors interested in learning IBM Security Verify Access.

#### Voraussetzungen

#### **Prerequisites**

Before taking this course, make sure that you have the following skills:

- Familiarity with LDAP, TCP/IP and HTTP
- Familiarity with the Linux command-line
- Working knowledge of security concepts, including SSL, authentication, and authorization

# **Trainingsprogramm**

#### **Course Outline**

Unit 1: Introduction to IBM Security Verify AccessUnit 2: Architecture and deploymentUnit 3: Managing users, groups, and domainsUnit 4: Reverse Proxy (WebSEAL) conceptsUnit 5: Managing access controlUnit 6: Configuring junctions for back-end resourcesUnit 7: Authentication framework and methodsUnit 8: Logging, auditing, and tracing

### **Objective**

- Describe IBM Security Verify Access product and its key features
- Discuss the architecture and deployment process
- Configure IBM Security Verify Access users, groups, and domains
- Introduce concepts of a reverse proxy and how it fits in your web-based infrastructure
- Describe protected object space and the policy access control model
- Explain how to set up reverse proxy junctions to handle web requests
- Discuss and configure authentication mechanisms that are supported by Verify Access
- Explain and set up logging, auditing, and tracing for Verify Access components

#### **Schulungsmethode**

# **Live Online Training**

1. Mai 2023 bis 3. Mai 2023

19. Jun 2023 bis 21. Jun 2023

25. Sep 2023 bis 27. Sep 2023



New

# IBM BQ104G - IBM QRadar SIEM Foundations

🙎 Live Online oder Präsenz

Dauer: 24h00 Nr.: 30434

Preis: 2.400,00 € netto 2.856,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

IBM Security QRadar enables deep visibility into network, endpoint, user, and application activity. It provides collection, normalization, correlation, and secure storage of events, flows, assets, and vulnerabilities. Suspected attacks and policy breaches are highlighted as offenses. In this course, you learn about the solution architecture, how to navigate the user interface, and how to investigate offenses. You search and analyze the information from which QRadar concluded a suspicious activity. Hands-on exercises reinforce the skills learned.

In this 3-day instructor-led course, you learn how to perform the following tasks:

- Describe how QRadar collects data to detect suspicious activities
- Describe the QRadar architecture and data flows
- Navigate the user interface
- Define log sources, protocols, and event details
- Discover how QRadar collects and analyzes network flow information
- · Describe the QRadar Custom Rule Engine
- Utilize the Use Case Manager app
- Discover and manage asset information
- · Learn about a variety of QRadar apps, content extensions, and the App Framework
- Analyze offenses by using the QRadar UI and the Analyst Workflow app
- · Search, filter, group, and analyze security data
- Use AQL for advanced searches
- Use QRadar to create customized reports
- · Explore aggregated data management
- · Define sophisticated reporting using Pulse Dashboards
- Discover QRadar administrative tasks

Extensive lab exercises are provided to allow students an insight into the routine work of an IT Security Analyst operating the IBM QRadar SIEM platform. The exercises cover the following topics:

- Architecture exercises
- UI Overview exercises

- Log Sources exercises
- Flows and QRadar Network Insights exercises
- Custom Rule Engine (CRE) exercises
- Use Case Manager app exercises
- Assets exercises
- App Framework exercises
- Working with Offenses exercises.
- Search, filtering, and AQL exercises
- · Reporting and Dashboards exercises
- QRadar Admin tasks exercises

The lab environment for this course uses the IBM QRadar SIEM 7.4 platform.

#### Wer sollte teilnehmen:

#### Zielgruppe

#### **Audience**

This course is designed for security analysts, security technical architects, offense managers, network administrators, and system administrators using QRadar SIEM.

#### Voraussetzungen

#### **Prerequisites**

Before taking this course, make sure that you have the following skills:

- IT infrastructure
- IT security fundamentals
- Linux
- Windows
- TCP/IP networking
- Syslog

#### **Trainingsprogramm**

#### **Course Outline**

- Unit 0: IBM Security QRadar 7.4 Fundamentals
- Unit 1: QRadar Architecture
- Unit 2: QRadar UI Overview
- Unit 3: QRadar Log Source
- Unit 4: QRadar flows and QRadar Network Insights
- Unit 5: QRadar Custom Rule Engine (CRE)
- Unit 6: QRadar Use Case Manager app
- Unit 7: QRadar Assets
- Unit 8: QRadar extensions
- Unit 9: Working with Offenses
- Unit 10: QRadar Search, filtering, and AQL

- Unit 11: QRadar Reporting and Dashboards
- Unit 12: QRadar Admin Console

#### **Objective**

After completing this course, you should be able to perform the following tasks:

- Describe how QRadar collects data to detect suspicious activities
- Describe the QRadar architecture and data flows
- Navigate the user interface
- Define log sources, protocols, and event details
- Discover how QRadar collects and analyzes network flow information
- Describe the QRadar Custom Rule Engine
- Utilize the Use Case Manager app
- Discover and manage asset information
- Learn about a variety of QRadar apps, content extensions, and the App Framework
- Analyze offenses by using the QRadar UI and the Analyst Workflow app
- Search, filter, group, and analyze security data
- Use AQL for advanced searches
- Use QRadar to create customized reports
- Explore aggregated data management
- Define sophisticated reporting using Pulse Dashboards
- Discover QRadar administrative tasks

#### Schulungsmethode

# Termine und Orte Live Online Training 1. Mai 2023 bis 3. Mai 2023 19. Jun 2023 bis 21. Jun 2023 10. Jul 2023 bis 12. Jul 2023 Leinfelden-Echterdingen 9. Okt 2023 bis 11. Okt 2023 6. Nov 2023 bis 8. Nov 2023



# IBM TW085G - IBM Directory Server 6.4 Fundamentals

🙎 Live Online oder Präsenz

Dauer : 16h00 Nr. : 30320

Preis: 1.600,00 € netto 1.904,00 € inkl. 19 % MwSt.

Inhouse-Paket: Auf Anfrage

#### **Overview**

This course describes the processes, procedures, and practices necessary to configure and administer IBM Directory Server. During the hand-on exercises, students will perform basic Directory Server configuration, setup replication, use logs and problem determination tools to troubleshoot directory server.

Students will not only learn about the components, functions, and features that are part of the directory server, but will learn about typical deployment scenarios of the directory server, as well.

#### Wer sollte teilnehmen:

#### **Zielgruppe**

#### **Audience**

LDAP Administrators

Voraussetzungen

# **Prerequisites**

Before taking this course, make sure that you have the following skills:

- · Working knowledge of Linux
- Working knowledge of general security concepts, including SSL, authentication, and authorization

#### **Trainingsprogramm**

#### **Course Outline**

- Unit 1: IBM Directory Server overview
- Unit 2: Managing directory data

- Unit 3: Directory Server features
- Unit 4: Distributed Directories
- Unit 5: Performance
- Unit 6: Problem determination

# **Objective**

- Define LDAP and discuss concepts regarding LDAP standards
- Manage directory entries and search the directory; explain the purpose of the directory schema
- Define the security features of IBM Directory Server
- Define the replication features of IBM Directory Server
- Define the performance features of IBM Directory Server
- Define problem determination facilities

# Schulungsmethode

# Live Online Training

4. Sep 2023 bis 5. Sep 2023

4. Dez 2023 bis 5. Dez 2023