IBM MQ Administration for

■ **System Administrators**
■ **System-Related Staff**

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1 General Information

There are two groups of training resources: mandatory and elective ones. Mandatory subjects are relevant for examination. Hence, to receive a certificate at the end of the training module, there has to be sufficient command of the knowledge imparted to be evaluated in tests, examinations and practical work.

Elective subjects can be studied on a voluntary basis and of course there will be qualified staff to answer corresponding questions.

The average study workload for mandatory subjects is 8-10 hours a week and comprises the following activities:

- Presence workshop(s) depending on the module)
- Virtual classroom session
- E-Learning activities
- Labs and exercises

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1.1 Kick-off Workshop

Face-to-face Workshop
Our kick-off workshops serve as the basis for a successful cooperation during the training period. The workshop will take place at a location, where we have an infrastructure needed to become familiar with and learn to use the e-learning tools that are used during the course. As experience has shown, these tools subsequently will be handled even in "remote mode" efficiently and without much need for further acclimatisation.

Duration   2 x 3 hours

Workshop Objectives

This online workshop aims at three things:

- Participants and key-lecturers get to know each other.
- Participants get to know the most important e-learning tools, especially the virtual classroom and the operating system used.
- Participants get an initial overview of the module content.

Content

Introduction
Introducing participants
Introduction to the topic

Learning Efficiency
Learning and neurobiology research
Efficient learning

E-Learning & Blended Learning
Significance of e-learning
Advantages of Blended Learning
Integration of Web 2.0
Overview e-learning tools

Moodle Learning Platform
Learning platform overview
Structure of learning platform

Virtual Classroom
VC-Session objectives
How VC differs from traditional classrooms
Using the virtual classroom

Client/Server Architectures
What is a Client / Server?
Application Architectures
The role of MQ in Client/Server

Access to the Mainframe
EMA infrastructure
Accessing the IBM Computer

The Role of MQ
Client/Server architecture
The role of MQ in enterprises

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1.2   IBM MQ Basics

Objectives

Participants will know the role of a message-oriented middleware (MoM) as an asynchronous communication technique compared to synchronous techniques as RPC and RMI. They know what queue managers and channels are used for. They can describe the idea and advantages of cluster configurations. They know how to configure secure connections. They can describe the different headers and the information they contain.

Content

Overview
What is Messaging & Queuing?
Limits and infrastructures
Names / History / Platforms
Versions (LTS / CD) / Lifecycle-Management
Communication patterns
(1-way, 2-way, request/reply, pub/sub
MQ-connections / MQ-client

Queuemanager
Main tasks / Characteristics
Adressspaces (xxxxMST + xxxxCHIN)
Logs (error and active)
Pagesets
Storeclasses (DEFAULT, REMOTE, SYSTEM, …)

Queues
Local queues
Remote queues
Alias queues
System queues
Model queues
Temporary / Dynamic queues
Default queues

Channels
Client-channel
Sender-receiver channel
Sender-requester channel

Cluster
Overview / Requirements / Advantages
Building a MQ-cluster
Using a MQ cluster
Repositories
Multiple / Overlapping clusters
Pros and cons

Security
Security overview
Certificates and keystore
Secure connections
Restricting access

Mainframe connections (CICS, IMS, QSG, CF)
CICS connections & triggers
IMS bridge
QSG requirements (CF + Db2)

Message Header / Data Conversion
MQMD / RFH2 / DLQ header
Data conversion (CCSID)

MQ Events
Queuemanager events
Performance and channel events
Configuration and command events

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1.3 IBM MQ Administration

Objectives

Participants are able to configure an MQ environment after SMP/E installation. They know the important parameters and what they are used for. They know how to use commands to administer queues and channels and they are able to configure connections to CICS, IMS and Db2.

Content

Installation and Initial Configuration
Datasets (after SMP/E)
General configuration (after SMP/E)
CHIN (CSQ4ZPRM)
System Parameters (CSQ6xxxx)
Default Objects (CSQ4INxx)
Create and configure pagesets
Create and configure storage classes
Create and configure bufferpools
MQSC

Basic Administration
MQSC commands
JCL / Automation
Error logs
Reason codes

Queue Administration
Local queues
Remote queues
Alias queues
System queues
Model Queues

Channel Administration
Client-channel
Sender-channel incl. related queues
Receiver-channel
Requester-channel

Cluster / Events
Configure clusters
Create cluster queues / namelists
Configure (activate / deactivate) events

Access / Security (Channel / REST APIs)
Certificates and where they stored (keyring)
Configure queue security
Configure channel security

**MQ Related Configurations for
CICS / IMS / QSG / CF**
Configure CICS initiation queue + trigger
Configure IMS bridge queue
Configure CD
Configure QSG and objects inside the QSG

Administration Tools
MQ Explorer
MQ Web Consols
REST APIs
PCF commands
Third party tools