

IBM MQ Administration for

- **System Programmers**
- **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, in order 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

1.1 Kick-off Workshop (1.5 days)

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 **1.5 days**

Date **TBA**

Location: **TBD**

Workshop Objectives

The presence 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

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
Names / History / Platforms
Versions (LTS / CD) / Lifecyclemanagement
Communication patterns

Queuemanager

Main tasks of a Queuemanager
Adressspaces (xxxxMST + xxxxCHIN)
Logs (error and active)
Pagesets
Storeclasses
How to start / stop a queue manager

Queues

Local queues
Remote queues
Alias queues
System queues
Model queues
Temporary / dynamic queues

Channels

Client-channel
Sender-channel (including XMIT-Queues)
Receiver-channel
Requester-channel
Cluster-channel overview

Cluster

How does a MQ cluster work / requirements
Main Advantages of clusters
How to build a MQ-Cluster
Full-Repositories and Partial-Repositories
Multiple MQ 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

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

