Hands-On Lab: Install IBM MQ 9.3 on Ubuntu Linux

Lab Overview

In this lab, participants will **install IBM MQ 9.3 on Ubuntu Linux**, verify the installation, create a queue manager, and test basic messaging.

Duration: 60–90 minutes
Skill level: Beginner to Intermediate
Delivery mode: Hands-on (individual VM or shared lab)

Learning Objectives

After completing this lab, participants will be able to:

- Prepare an Ubuntu system for IBM MQ installation
- Install IBM MQ 9.3 using .deb packages
- Verify IBM MQ installation
- Create and start a Queue Manager
- Perform a basic message put/get test

Lab Prerequisites

Software & System Requirements

- Ubuntu **20.04 LTS or 22.04 LTS**
- Minimum:
    - 2 GB RAM
    - 10 GB free disk space
- Internet access (or pre-downloaded MQ packages)
- User with **sudo** privileges

Pre-Lab Setup

Login to Ubuntu and open a terminal.

Exercise 1: Verify System & Install Dependencies

Step 1.1: Check OS Version

```
lsb_release -a
```

Step 1.2: Update System Packages

```
sudo apt update && sudo apt upgrade -y
```

Step 1.3: Install Required Libraries

```
sudo apt install -y \
  build-essential \
  bc \
  unzip \
  libpam0g \
  libncurses5 \
  curl
```

Step 1.4: Create mqm user and group

```
sudo groupadd -g 1100 mqm && \
sudo useradd -g mqm -u 1100 -d /var/mqm -s /bin/bash -m mqm && \
sudo usermod -a -G mqm $(whoami)
```

Step 1.5: Create directories with proper permissions

```
sudo mkdir -p /var/mqm /opt/mqm && \
sudo chown mqm:mqm /var/mqm /opt/mqm && \
sudo chmod 750 /var/mqm /opt/mqm
```

Exercise 2: Download IBM MQ 9.3

⚠️ IBM MQ requires an IBM account to download.

Step 2.1: Create Installation Directory

mkdir -p ~/ibmmq

cd ~/ibmmq

Step 2.2: Download IBM MQ 9.3 for Ubuntu (x86_64)

From IBM Fix Central or Passport Advantage, download:

Example package name:

9.3.0.0-IBM-MQ-UbuntuLinuxX64.tar.gz

(Trainer tip: Provide this file via shared folder or internal repo.)

Step 2.3: Extract the Package

tar -xvf 9.3.0.0-IBM-MQ-UbuntuLinuxX64.tar.gz

cd MQServer

Exercise 3: Accept License & Install IBM MQ

Step 3.1: Accept IBM MQ License

sudo ./mqlicense.sh

- Press **1** to accept the license.

Step 3.2: Install IBM MQ Using .deb Packages

Install all required MQ components:

sudo dpkg -i *.deb

If dependency errors occur:

sudo apt --fix-broken install -y

Re-run:

sudo dpkg -i *.deb

Exercise 4: Verify IBM MQ Installation

Step 4.1: Verify Installation

dspmqver

✅ Expected output:

Name: IBM MQ

Version: 9.3.0.0

Platform: IBM MQ for Linux (x86-64)

Step 4.2: Verify MQ User and Groups

id mqm

Expected:

- mqm user exists
- mqm group exists

Exercise 5: Configure Environment

Step 5.1: Switch to mqm User

sudo su - mqm

Step 5.2: Set MQ Environment

. /opt/mqm/bin/setmqenv -s

Exercise 6: Create and Start a Queue Manager

Step 6.1: Create Queue Manager

crtmqm QM1

Step 6.2: Start Queue Manager

strmqm QM1

Step 6.3: Verify Queue Manager Status

dspmq

Expected:

QMNAME(QM1) STATUS(Running)

Exercise 7: Create Queue and Test Messaging

Step 7.1: Start MQSC

runmqsc QM1

Step 7.2: Create a Local Queue

DEFINE QLOCAL(TEST.QUEUE)

END

Step 7.3: Put a Test Message

amqsput TEST.QUEUE QM1

Type:

Hello IBM MQ 9.3

Press **Enter**, then **Ctrl+D**

Step 7.4: Get the Message

amqsget TEST.QUEUE QM1

✅ Message should be displayed.

Exercise 8: Stop and Clean Up

Step 8.1: Stop Queue Manager

endmqm QM1

Step 8.2: Exit mqm User

exit

Lab Validation Checklist

✓ IBM MQ installed successfully
✓ dspmqver shows version 9.3
✓ Queue Manager created and started
✓ Message put/get successful