# IBM DATA POWER DEVELOPMENT TRAINING

## Environment Readiness Guide



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# Introduction & Training Objective

Welcome to IBM Data Power v10.x development course. This training course is **designed for integration developers** interested in gaining hands on experience with IBM Data Power v10.x product. During the training course, we will learn how to implement different integration scenarios supported by the product along with enforcement of necessary security mechanisms.

By the end of this course, you will hopefully be comfortable with the product itself and should be able to develop different types of services and supporting objects according to your use case within IBM Data Power Web Console.


*Note: Some of the advanced features of the product will not be covered during this training.*

# IBM Data Power Gateway

IBM® DataPower® Gateway serves as the enterprise-grade, field-proven, security-rich API gateway. The DataPower Gateway is available in physical, virtual, cloud, Linux®, and Docker form factors.

The DataPower Gateway is a single multichannel gateway that helps provide security, control, integration, and optimized access. These capabilities apply to a full range of mobile, web, application programming interface (API), service-oriented architecture (SOA), B2B, and cloud workloads. The capabilities help you to rapidly expand the scope of valuable IT assets to new channels that provide customers, employees, and partners with access to critical resources.


# IBM Data Power Gateway for Developers

As mentioned earlier, IBM Data Power is available in many form factors and covering details for each is beyond the scope of this training. IBM® provides options to run the DataPower® Gateway in a variety of software-only form factors. A virtual DataPower Gateway provides similar function to a physical appliance. Each form factor has inherent advantages and considerations that are specific to the deployment environment and its intended use.

To get you easily started, we will be using the Virtual offering of the IBM Data Power, specifically IBM Data Power Gateway for Developers.

*Note: IBM Data Power Gateway for developers is a no-cost offering that is available for running in only a Docker environment and does not include IBM Software Subscription and Support.*

# Development Environment Readiness

Prerequisites for this training require following software to be installed on the development machine. Installation of some software is optional (but recommended) while others are mandatory (highlighted in bold). Refer to the following table for details:

| Category | Software | |
|---|---|---|
| Container Management Platform | **Podman** or Docker | |
| Version Control | **Git** | GitHub |
| Messaging & Event Steaming | IBM MQ v9.x | Apache Kafka |
| Development & Testing | Visual Studio Code | Postman |

# Installing Podman or Docker


Refer to the product documentation for requirements and installation steps for desired platform and architecture. I will be covering steps for the installation of Podman Desktop on RedHat Enterprise Linux v9.x.

Podman Desktop:

https://podman.io/

https://podman.io/docs/installation

https://podman.io/get-started

Docker Desktop:

https://www.docker.com/

https://www.docker.com/products/docker-desktop/

https://docs.docker.com/engine/install/

https://docs.docker.com/get-started/workshop/

# Installing Version Control – Git

Refer to the product documentation for requirements and installation steps for desired platform and architecture. I will be covering steps for the installation of Git on RedHat Enterprise Linux v9.x.

Download Git:

https://git-scm.com/downloads

https://git-scm.com/downloads/linux

Clone IBM Data Power Training repository from GitHub:

*git clone https://github.com/ishahzad/ibm-datapower-training.git*

Learning Material:

https://git-scm.com/videos

https://git-scm.com/book/en/v2

# Installing IBM MQ v9.x Server

Refer to the product documentation for requirements and installation steps for desired platform and architecture. I will be covering steps for the installation of IBM MQ v9.x on RedHat Enterprise Linux v9.x using OCI Image from IBM Container Registry.

Download IBM MQ v9.x:

https://developer.ibm.com/articles/mq-downloads/

https://developer.ibm.com/tutorials/mq-connect-app-queue-manager-windows/

https://developer.ibm.com/tutorials/mq-connect-app-queue-manager-ubuntu/

Download IBM MQ v9.x Image from IBM Container Registry:

*podman pull icr.io/ibm-messaging/mq:latest*

*podman volume create qmdata*

*podman run --env LICENSE=accept --env MQ_QMGR_NAME=QMGR --env MQ_DEV=true *

*--volume qmdata:/mnt/mqm --publish 1414:1414 --publish 9443:9443 *

*--detach --name ibm-mq-server icr.io/ibm-messaging/mq:latest*

Note: Replace **podman** with **docker** in the aforementioned commands in case you are using docker.

Learning Material:

https://developer.ibm.com/tutorials/mq-connect-app-queue-manager-containers/

# Installing Visual Studio Code

Refer to the product documentation for requirements and installation steps for desired platform and architecture. I will be covering steps for the installation of Visual Studio Code and required plugins on RedHat Enterprise Linux v9.x.

Download and Install Visual Studio Code:

https://code.visualstudio.com/download

https://code.visualstudio.com/docs/setup/setup-overview

Install Following Plugins:

https://marketplace.visualstudio.com/items?itemName=redhat.vscode-xml

https://marketplace.visualstudio.com/items?itemName=redhat.vscode-yaml

https://marketplace.visualstudio.com/items?itemName=42Crunch.vscode-openapi

https://marketplace.visualstudio.com/items?itemName=Postman.postman-for-vscode

https://marketplace.visualstudio.com/items?itemName=donjayamanne.githistory

Learning Material:

https://code.visualstudio.com/docs/getstarted/getting-started

# Installing Postman


Refer to the product documentation for requirements and installation steps for desired platform and architecture. I will be covering steps for the installation of Postman on RedHat Enterprise Linux v9.x.

Download and Install Postman:

https://www.postman.com/downloads/

https://learning.postman.com/docs/getting-started/installation/installation-and-updates/

Learning Material:

https://www.postman.com/learn/

# Installing Apache Kafka

Refer to the product documentation for requirements and installation steps for desired platform and architecture. I will be covering steps for the installation of Apache Kafka on RedHat Enterprise Linux v9.x.

Download and Install Apache Kafka:

https://kafka.apache.org/downloads

https://kafka.apache.org/quickstart

Learning Material:

https://kafka.apache.org/intro

# Installing IBM Data Power Gateway

Refer to the product documentation for requirements a nd installation steps for desired platform and architecture. I will be covering steps for the installation of IBM Data Power Gateway v10.x on RedHat Enterprise Linux v9.x using OCI Image from IBM Container Registry.

Download IBM Data Power Gateway v10.x Image from IBM Container Registry:

*podman pull icr.io/cpopen/datapower/datapower-limited:10.6.2.0*

*podman tag icr.io/cpopen/datapower/datapower-limited:10.6.2.0 ibm-datapower:latest*

*podman volume create datapower*

*podman run -it -v datapower:/opt/ibm/datapower/drouter/config *

*-v datapower:/opt/ibm/datapower/drouter/local -v datapower:/opt/ibm/datapower/root/secure/usrcerts *

*-e DATAPOWER_ACCEPT_LICENSE="true" -e DATAPOWER_INTERACTIVE="true" *

*-p 9090:9090 -p 5554:5554 -p 9100-9199:9100-9199 --name ibm-datapower ibm-datapower*

Note: Replace **podman** with **docker** in the aforementioned commands in case you are using docker.

Note: Default username and password for IBM Data Power Gateway is admin/admin

Configuring Access to Data Power GUI:

# configure terminal

# web-mgmt

# admin-state "enabled"

# exit

Note: To start a GUI session, enter https://localhost:9090 as the URL in your browser.

References:

https://www.ibm.com/docs/en/datapower-gateway/10.6.x?topic=docker-creating-datapower-application

https://www.ibm.com/docs/en/datapower-gateway/10.6.x?topic=application-environment-variables-drouter-arguments-datapower-docker-image

https://www.ibm.com/support/pages/part-1-introduction-rest-management-interface-and-status-monitoring