

DB2 QMF Data Service  
Version 12 Release 1

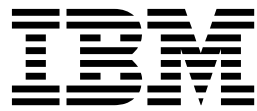
## *Customization Guide*





DB2 QMF Data Service  
Version 12 Release 1

## *Customization Guide*



**Note**

Before using this information and the product it supports, be sure to read the general information under “Notices” at the end of this information.

This edition applies to Version 12 Release 1 of IBM DB2 Query Management Facility (QMF) Enterprise Edition, which is a feature of IBM DB2 12 for z/OS (5650-DB2) and IBM DB2 11 for z/OS (5615-DB2). It also applies to Version 12 Release 1 of IBM DB2 QMF for z/OS (5697-QM2), which is a stand-alone IBM DB2 for z/OS tool. This information applies to all subsequent releases and modifications until otherwise indicated in new editions.

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# IBM® DB2 QMF® Data Service - Customization Guide



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## Customizing the Data Service server

After you install the Data Service server, customize the server for use.

### Before you begin

You must install the Data Service server and apply server maintenance before customizing the server. To apply server maintenance, you should acquire available PTFs and apply them to the server so you will have the most current available code for your installation.

### About this task

After you complete your Data Service server customization, you are ready to install and deploy IBM® DB2 QMF® Data Service solutions on the server.

Customizing the server component includes the following tasks:

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## Required naming conventions

You must follow the Data Service server naming conventions for the server subsystem ID and the server initialization member.

The server subsystem name must be  $xQDy$ , where  $x$  is any alphabetic character A - Z and  $y$  is any alphanumeric character A-Z or 0-9.

Depending on what you name the server subsystem, the server initialization member must follow the same naming convention,  $xQDyIN00$ .

**Note:** The default server naming conventions used throughout this guide are CQDS for the server subsystem name and CQDSIN00 for the server initialization member.

---

## Creating system data sets

The CQDDFDIV member creates data sets for the Trace Browse, the global variable checkpoint, and the data-mapping facility (DMF). The CQDGNMP1 member copies distributed data sets into user-modifiable data sets. The CQDEXSWI member copies distributed objects into user-modifiable objects.

### Procedure

1. Customize the CQDDFDIV member in *hlq*.SCQDCNTL to meet your requirements. The CQDDFDIV member contains comments that describe how to customize the variables.
2. Submit the CQDDFDIV member.
3. Customize the CQDGNMP1 member in *hlq*.SCQDCNTL to meet your requirements. The CQDGNMP1 member contains comments that describe how to customize the variables.
4. Submit the CQDGNMP1 member.

**Note:** The map data set created in step 4 should be the first concatenated data set to the server's CQDMAPP DD. See CQD.SCQDCNTL(CQD1PROC). Both

the user creating maps and the server should have read and write permissions to this data set. The system-provided data set (CQD.SCQDSMAP) should be the last data set in the CQDMAPP concatenation and the user and server should only have read access to the data set. The administrator will need read and write permissions.

5. Customize the CQDEXSWI member in *hlq*.SCQDCNTL to meet your requirements. The CQDEXSWI member contains comments that describe how to customize the variables.
6. Submit the CQDEXSWI member.

---

## Creating the SWIOBJ data set

### Procedure

This data set is later used in the server initialization member CQDSIN00 for the **SWICNTLDSN** parameter definition:

```
swiobj = SHLQ2||".SCQDOBJ"  
"MODIFY PARM NAME(SWICNTLDSN) VALUE("||swiobj||")"
```

---

## Defining security authorizations

To use an external security product, such as RACF, ACF2, or Top Secret, define the started task name to the security product and authorize the data set.

### Procedure

To define the server and other required permissions for your security product, customize the appropriate security option located in the *hlq*.SCQDCNTL library, and submit the job:

- CQDRAVDB is for IBM Resource Access Control Facility (RACF) security.
- CQDA2VDB is for CA ACF2 (Access Control Facility) security.
- CQDTSVDB is for CA Top Secret Security (TSS).

### Results

Make sure that your z/OS Security Administrator reviews the security definitions. You might need to change definitions to meet requirements at your site.

---

## Configuring Workload Manager (WLM)

To get optimum performance from the server, define the server to WLM. The Data Service server should be prioritized slightly below the data provider in your WLM environment. It is not sufficient to simply add the STC to a WLM service class as the server will create independent enclaves for each connection.

### About this task

The server should be configured to use a medium to high performing WLM velocity goal as its default service class.

### Procedure

1. Create a WLM Classification rule.
  - a. Go to the WLM ISPF application, and select option 6 (Classification Rules).

- b. Select option **1** to Create.
  - c. Set the Subsystem Type to CQD, and provide an optional description.
  - d. Under the Class/Service Column next to DEFAULTS, set the desired default service class name. If a desired service class does not exist, then create one using option 4 (Service Classes) under the **Primary WLM** menu. Press enter and PF3 to save.
2. Define the Data Service started task CQD1PROC.
    - a. Go to the WLM ISPF application, and select option 6 (Classification Rules).
    - b. For the STC WLM-subsystem type, select **Modify**.
    - c. Add an entry for CQD1PROC.
    - d. Add an appropriate service class for the started task and define it relative to existing workload resource management objectives.
    - e. Add a unique Report class for the started task.
  3. Activate the new WLM policy definition.

---

## APF-authorizing the LOAD library

You must authorize the LOAD library CQD.SCQDLOAD for APF (Authorized Program Facility).

### About this task

The APF authorize should be done dynamically and then made permanent for the next IPL (initial program load).

---

## Customizing the server initialization member

The server initialization member CQDSIN00 is a REXX program that you use to set product parameters and define links and databases. You must customize the server initialization member for your installation environment.

### About this task

As you go through the installation, you accept or set parameter values in the server initialization member.

If you are installing the server for the first time, it is recommended that all the default values be accepted. You can change the values as needed later.

If you are installing a new version of the server over a previous version, the previous server member might contain parameter values that you modified to meet specific requirements in your environment. In this case, you might need to reset the values of the parameters during the installation.

### Procedure

1. Find the line that contains "SHLQ1" and provide your own high-level qualifier to define the ISPF data sets. For example: "SHLQ1=CQD"
2. Find the line that contains "SHLQ2" and provide your own high-level qualifier to define the Event Facility (SEF) data sets. Ensure that the HLQ results in proper data set references for these features. For example:  
"SHLQ2=CQD.CQDS"
3. Review the following default values for the TCP/IP parameters and change the values as necessary.

```
"MODIFY PARM NAME(OEPORTNUMBER) VALUE(1200) "  
"MODIFY PARM NAME(WSOEPORT) VALUE(1201) "  
"MODIFY PARM NAME(OEPIOPORTNUMBER) VALUE(1202) "  
"MODIFY PARM NAME(TRACEOERW) VALUE(YES) "  
"MODIFY PARM NAME(OEKEEPALIVETIME) VALUE(30) "  
"MODIFY PARM NAME(PARALLELIO) VALUE(YES) "  
"MODIFY PARM NAME(OEPIOPORTNUMBER) VALUE(1204) "
```

---

## Configuring the started task JCL

To configure the started task JCL, modify the CQD1PROC (subsystem default ID) member that is in the *hlq.SCQDCNTL* library.

### About this task

The CQD1PROC member contains the JCL procedure that is required to run the main address space (started task).

### Procedure

1. Add the HLQ name of the libraries to the *hlq* parameter.  
This parameter sets the server data set allocations to the correct data set names.
2. Ensure that the DD CQDMAPP concatenation points to the *&hlq.CQDS.SCQDMAP* data set created in the previous installation job CQDGNMP1. This data set should be first in the concatenation and is used for storing virtual table maps created during development. The *&hlq.SCQDMAP* data set, which contains maps that are part of the product distribution, should be placed last.
3. The server runs as a z/OS started task. Under normal circumstances, the server starts at system startup and stops before the system shuts down. To start the server use the following console command: S CQDS

**Note:** If you use a procedure name other than the SSID provided in the example, then you issue the start command using that procedure name.

4. If you use an automation package to start the system, associate the **START** command with the VTAM initialization complete message (IST020I), the TCP/IP initialization complete message (EZB6473I), or both messages.
5. To verify that the startup is successful, look for the following entries in the server Job Entry Subsystem (JES) log.

```
SD74391I OE stack binding port 1200 to IP address 0.0.0.0  
SD74391I OE stack binding port 1201 to IP address 0.0.0.0  
SD74391I OE stack binding port 1202 to IP address 0.0.0.0
```

### What to do next

If you want to stop the server:

```
P CQDS
```

If you issue a **CANCEL** command, all available connections terminate with an abend, and the server shuts down immediately.

---

## Configuring the ISPF application

Configure and start the ISPF application.

## Before you begin

The Data Service server must be started before you can start the ISPF application.

### Procedure

1. Edit the *hlq*.SCQDEXEC(CQD) member, and replace the data set name in the following statement with the data set name that you chose for the *hlq*.SCQDLOAD library:  

```
llib='hlq.SCQDLOAD'
```
2. Copy the *hlq*.SCQDEXEC(CQD) member to a data set that is allocated to all TSO users SYSPROC allocation.

Before starting the ISPF application, you must start your server. See “Configuring the started task JCL” on page 4

When the server starts, the ISPF data sets are dynamically allocated.

3. To start the ISPF application, go to the ISPF command shell and enter the following command: EX 'hlq.SCQDEXEC(CQD)' 'SUB(CQDS)' Where:

- *hlq* is the high level qualifier.
- *CQDS* is the subsystem name of the copy of the server instance.

All ISPF clients communicate with the specified subsystem.

---

## Verifying the Data Service server installation

To verify the server installation, create a sample VSAM file and a virtual table, and then run a query that accesses the VSAM data.

### Procedure

1. Create the sample VSAM file on the mainframe that hosts the server. Run the CQDGNSTF member in the *hlq*.SCQDCNTL data set to allocate and load the sample VSAM file. The job should complete with a condition code of 0.
2. Create the staffvs virtual table. Run the CQDIVVS1 member in the *hlq*.SCQDCNTL data set to perform a batch extract of the sample VSAM file listing and create a virtual table that formats the result set that is returned from the VSAM file. This step runs a query against the sample VSAM file. The job should complete with a condition code of 0.



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Product Number: 5650-DB2  
5615-DB2  
5697-DB2

Printed in USA

GC27-8888-01

