IBM

Accessing WebSphere MQ from the Replication Center and ASNCLP program

Accessing WebSphere MQ from the Replication Center and ASNCLP program

Before using this information and the product it supports, be sure to read the general information under "Notices" on page 9.

Contents

Using the Replication Center and ASNCLP to access WebSphere MQ objects

After you install the replication administration stored procedure, you can use the Replication Center to display and select queue managers and queues, validate that these objects have correct attributes for Q replication, and to send test messages between the queues.

You can also use the ASNCLP command-line program to validate WebSphere® MQ objects and to send test messages.

Before you begin
- WebSphere MQ queue managers must be started on all systems where you want to use the access features.
- The command server that is associated with each queue manager must be running. You can ensure that the server is running by issuing the **strmqcsv** command or by starting the queue manager by using the WebSphere MQ Explorer tool.
- The fenced user of the DB2® instance where the stored procedure is installed must belong to a group with authority to access WebSphere MQ.

The following sections describe the WebSphere MQ access features:
- "Browsing for queue managers and queues"
- "Validating settings for queue managers and queues" on page 3
- "Sending test messages" on page 5
- "Checking your WebSphere MQ configuration by using the ASNCLP program" on page 6

Browsing for queue managers and queues

When the Replication Center is enabled for WebSphere MQ access, you can use the ⟨···⟩ button to display and select queue managers and queues. See Figure 1.
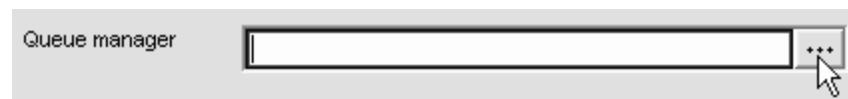

Figure 1. Queue manager selection field on Create Q Capture Control Tables wizard

The Choose Queue Manager window displays the names of all queue managers defined on the system. The queue selection windows displays the name, type, and maximum message length. See Figure 2 on page 2.
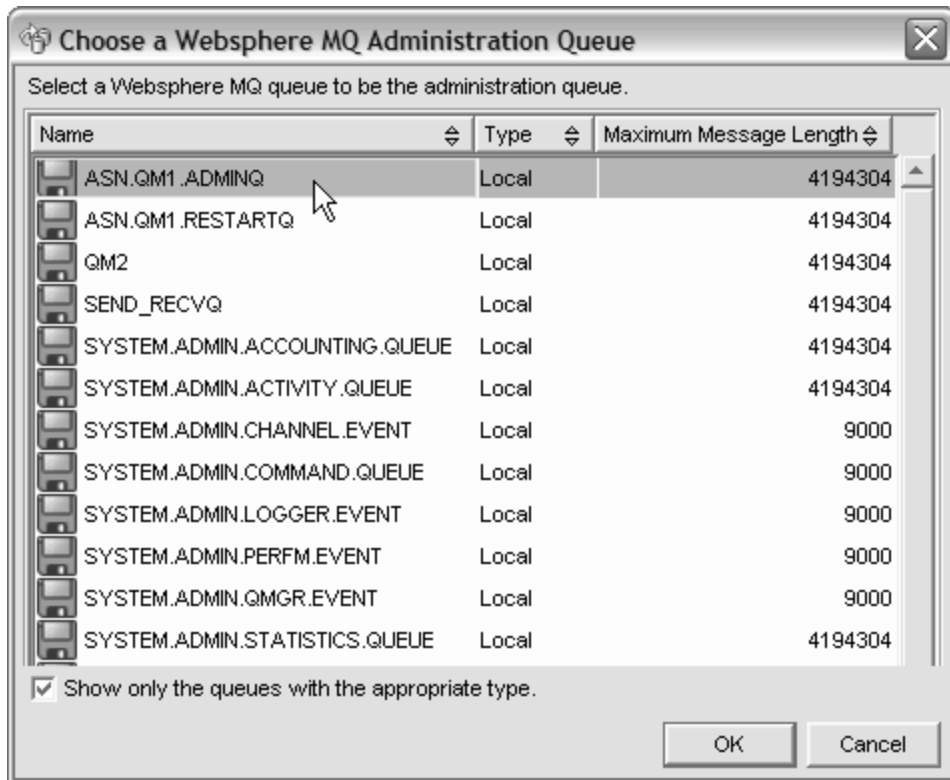
Figure 2. Queue selection window for Q Capture administration queue

Tip: If you select a queue manager that is not running, or whose command server is not started, you will not be able to open the queue selection window. Click **Cancel** to close the window, then reopen it after correcting the problem.

For the Create Replication Queue Map and Create Publishing Queue Map windows and their matching properties windows, the queue selection windows display all queues that are defined within the queue managers for the specified Q Capture and Q Apply schemas.

By default, the window shows only the queues that are valid for Q replication. For example, the Choose Restart Queue window that is launched from the Create Q Capture Control Tables wizard shows only local queues by default because the restart queue must be a local queue.

You can change the default so that the window shows all queues that are defined within the queue manager. Queues with types that are not valid are denoted by a different icon. Figure 3 on page 3 shows a remote queue and a model queue that are not valid to serve as the Q Capture administration queue because they are not local queues.
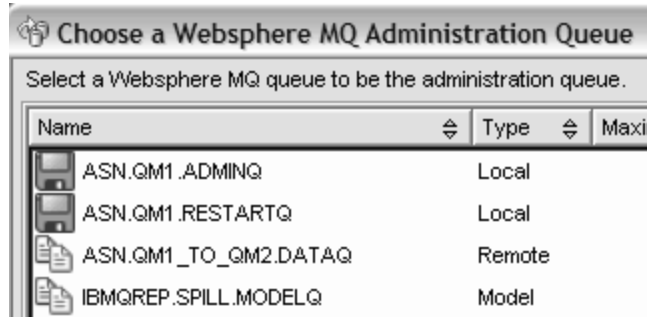
Figure 3. Choose Administration Queue window that shows queues that are not valid

You can also use the new function to change the queue manager that is used by a
Q Apply program. Open the Change Parameters - Saved window from a Q Apply
server object, and then select the QUEUE MANAGER keyword. The **Value** area
allows you to select and validate a new queue manager. See Figure 4.
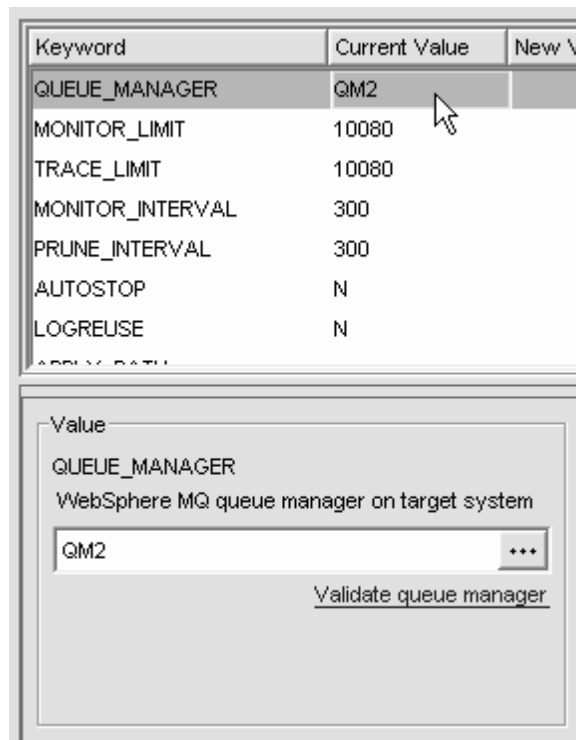
Figure 4. Changing queue managers in the Change Parameters - Saved window for Q Apply

Validating settings for queue managers and queues

After you specify WebSphere MQ objects on a window or wizard page, you can
click the validation link to check that the queue managers and queues have the
correct settings. Figure 5 on page 4 shows the **Validate WebSphere MQ objects**
link on the Create Q Capture Control Tables wizard.

Figure 5. Validation link on the Create Q Capture Control Tables wizard

The Replication Center checks a queue manager or queues and provides messages that describe any settings that need to be changed. For example, Figure 6 shows a Validation Report window in which the queue that was specified as Q Capture administration queue was not defined as persistent.
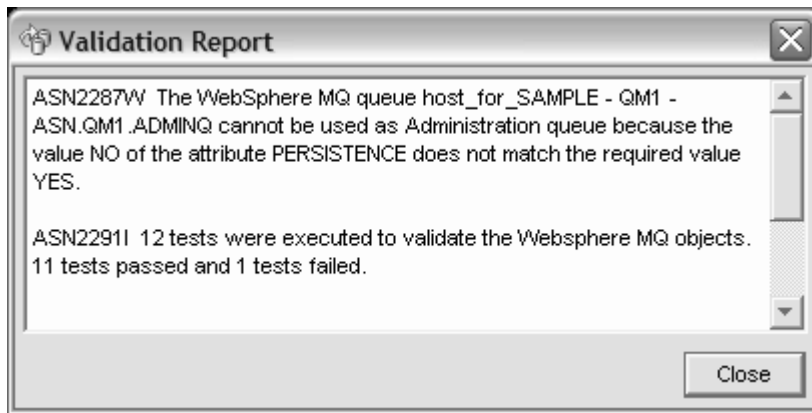
Figure 6. Validation report for administration queue and restart queue

Based on the report, you can modify the queue manager or queue and click the validation link again to verify your changes. Figure 7 shows a successful Validation Report window.
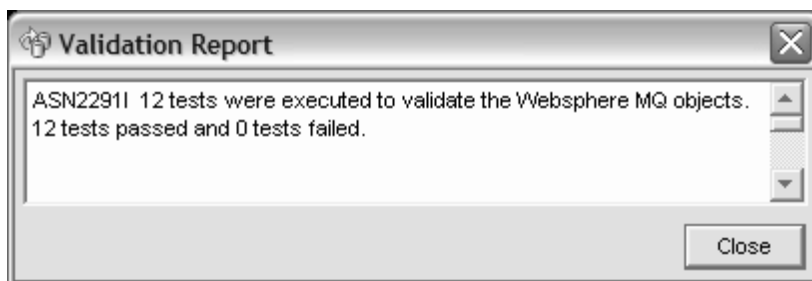
Figure 7. Validation Report window after changing queue settings that were not valid

Other examples of settings that are checked include:
- All local and remote queues need to have a maximum message size (MAXMSGL) smaller or equal to the MAXMSGL of their queue manager.
- All remote queues need to have an existing transmission queue.
- The send queue needs to be defined as PUT (ENABLED).
- The receive queue needs to be defined as GET (ENABLED), SHARE, and with a message delivery sequence of MSGDLVSQ(PRIORITY).

For more detail about Q replication requirements for queue managers, queues, and other WebSphere MQ objects, see "Required settings for WebSphere MQ objects" in the DB2 Information Center at http://publib.boulder.ibm.com/infocenter/db2help/topic/com.ibm.db2.ii.doc/admin/cqrcsmq4.h

You can change the settings by using the MQSC commands such as **ALTER QMGR** or **ALTER QLOCAL**. For example, the following command changes the persistence setting for an administration queue:

```
ALTER QLOCAL (ASN.QM1.ADMINQ) DEFPSIST (YES)
```

You can also use the WebSphere MQ Explorer tool to change properties for queue managers and queues. Figure 8 shows the Explorer (Version 6.0) being used to change the persistence setting for an administration queue.
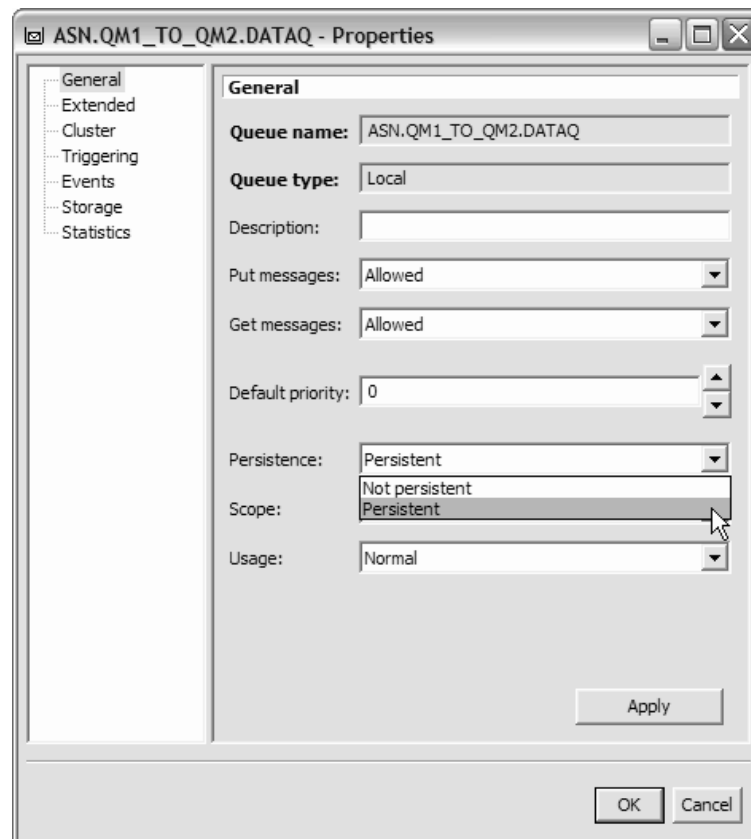
Figure 8. Local queue properties window in the WebSphere MQ Explorer

Sending test messages

When the WebSphere MQ access features are enabled, you can send test messages from the Create Replication Queue Map window and Replication Queue Map Properties notebook to verify that your message flow is operating correctly.

The Replication Center puts a test message on the send queue, and then tries to retrieve the message from the receive queue. The Replication Center also puts a test message on the Q Apply administration queue, and tries to retrieve the message from the Q Capture administration queue. The test progress and results are displayed using icons and messages.

To send test messages:

1. Open one of the following windows:
   - The Create Replication Queue Map window by right-clicking a Replication Queue Maps folder in the object tree and clicking **Create**.
   - The Replication Queue Map properties window by right clicking a replication queue map in the contents pane and clicking **Properties**.
2. Make sure that the send queue, receive queue, and Q Apply administration queue that you want to test are specified, then click **Validate queues**.
3. Select **Send test messages**, and then click **Start**.

The following icons are used to signal the progress of the test:
- A clock means a message test has not been completed.
- A green check means a message was successfully sent and received.
- A red X means the test timed out and no message was received.

If you also selected the **Validate queues** check box, a red X next to a queue means that one or more properties of the queue are invalid. A green check means all queue properties are valid.
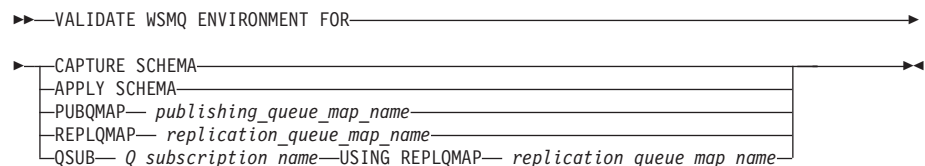
Status, error, and warning messages are displayed in the message area of the window.

Checking your WebSphere MQ configuration by using the ASNCLP program

You can use the ASNCLP command-line program to validate the WebSphere MQ environment for the Q Capture and Q Apply control tables, queue maps, and Q subscriptions. You can also send test messages by using the ASNCLP program.

Checking queue managers and queues

Use the CHECK WSMQ ENVIRONMENT FOR command to check that queue managers and queues have correct settings for Q replication and event publishing. The following diagram shows the syntax.

```
►►─VALIDATE WSMQ ENVIRONMENT FOR─────────────────────────────────────────►

  ►─┬─CAPTURE SCHEMA───────────────────────────────────────────────────┬─►◄
    ├─APPLY SCHEMA────────────────────────────────────────────────────┤
    ├─PUBQMAP─ publishing_queue_map_name─────────────────────────────┤
    ├─REPLQMAP─ replication_queue_map_name───────────────────────────┤
    └─QSUB─ Q_subscription_name─USING REPLQMAP─ replication_queue_map_name─┘
```

Messages that describe the results of the validation checks are sent to the command window and the ASNCLP log file.

The following example shows the commands to check the WebSphere MQ environment for a publishing queue map PQMAP1:

```
asnclp session set to q replication;
set server capture to SAMPLE;
set capture schema "ASN";
validate WSMQ environment for pubqmap PQMAP1;
```

Sending test messages

Use the VALIDATE WSMQ MESSAGE FLOW FOR command to send test messages for an existing replication queue map. The command sends a test message between the send queue and receive queue, and between the Q Apply administration queue and the Q Capture administration queue.

Issue the command in the same environment for which you would issue a CREATE REPLQMAP command. The following diagram shows the syntax.

```
►►──VALIDATE WSMQ MESSAGE FLOW FOR──REPLQMAP── replication_queue_map_name──────►◄
```

Messages that describe the test results are sent to the command window and the ASNCLP log file.

The following example shows the commands to send test messages for a replication queue map RQMAP1:

```
asnclp session set to q replication;
set server capture to SAMPLE;
set server apply to TARGET;
set capture schema "ASN";
set apply schema "ASN";
validate WSMQ message flow for REPLQMAP RQMAP1;
```

Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in all countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country/region or send inquiries, in writing, to:

IBM World Trade Asia Corporation
Licensing
2-31 Roppongi 3-chome, Minato-ku
Tokyo 106-0032, Japan

The following paragraph does not apply to the United Kingdom or any other country/region where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions; therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product, and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information that has been exchanged, should contact:

IBM Corporation
J46A/G4
555 Bailey Avenue
San Jose, CA 95141-1003
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems, and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements, or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious, and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs, in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM for the purposes of developing, using, marketing, or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. You may copy, modify, and distribute these sample programs in any form without payment to IBM for the purposes of developing, using, marketing, or distributing application programs conforming to IBM's application programming interfaces.

Each copy or any portion of these sample programs or any derivative work must include a copyright notice as follows:

© (*your company name*) (*year*). Portions of this code are derived from IBM Corp. Sample Programs. © Copyright IBM Corp. *_enter the year or years_*. All rights reserved.

Trademarks

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

WebSphere MQ
DB2
WebSphere Information Integrator Replication Edition
WebSphere Information Integrator Event Publisher Edition

The following terms are trademarks or registered trademarks of other companies:

Windows

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Intel, Intel Inside (logos), MMX and Pentium are trademarks of Intel Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product or service names may be trademarks or service marks of others.

Contacting IBM

To contact IBM in the United States or Canada, call one of the following numbers:
- For customer service: 1-800-IBM-SERV (1-800-426-7378)
- For DB2 marketing and sales: 1-800-IBM-4YOU (1-800-426-4968)

To learn about available service options, call one of the following numbers:
- In the United States: 1-888-426-4343
- In Canada: 1-800-465-9600

To locate an IBM office in your country or region, see the IBM Directory of Worldwide Contacts on the Web at www.ibm.com/planetwide.

Product information

Information about DB2 Information Integrator is available by telephone or on the Web.

If you live in the United States, you can call one of the following numbers:
- To order products or to obtain general information: 1-800-IBM-CALL (1-800-426-2255)
- To order publications: 1-800-879-2755

On the Web, go to www.ibm.com/software/data/integration. This site contains the latest information on the technical library, ordering books, client downloads, newsgroups, fix packs, news, and links to Web resources.

To locate an IBM office in your country or region, see the IBM Directory of Worldwide Contacts on the Web at www.ibm.com/planetwide.

Comments on the documentation

Your feedback helps IBM to provide quality information. Please send any comments that you have about this book or other DB2 Information Integrator documentation. You can use any of the following methods to provide comments:
- Send your comments using the online readers' comment form at www.ibm.com/software/data/rcf.
- Send your comments by electronic mail (e-mail) to comments@us.ibm.com. Be sure to include the name of the product, the version number of the product, and the name and part number of the book (if applicable). If you are commenting on specific text, please include the location of the text (for example, a title, a table number, or a page number).

IBM ®

Printed in USA