

VSI OpenVMS

Distributed Queuing Service User's Guide

Operating System and Version: VSI OpenVMS IA-64 Version 8.4-1H1 or higher
VSI OpenVMS Alpha Version 8.4-2L1 or higher

Software Version: The Distributed Queuing Service Version 1.3

Distributed Queuing Service User's Guide



VMS Software

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Preface

The Distributed Queuing Service (DQS) for OpenVMS Systems software enables you to print files on devices that are attached to remote DECnet systems on your network. DQS software also allows you to display the status of your jobs at any time during their processing and to delete or modify your print jobs.

The Distributed Queuing Service Version 1.3 for OpenVMS systems software product replaces the following products:

- VAX Distributed Queuing Service Version 1.2 software
- Distributed Queuing Service for OpenVMS AXP Version 1.2 software

This product is based on a client/server design, where two components of software (client and server) cooperate to make the print service function.

1. About VSI

VMS Software, Inc. (VSI) is an independent software company licensed by Hewlett Packard Enterprise to develop and support the OpenVMS operating system.

2. Intended Audience

This guide describes how to use the DQS software on OpenVMS AXP and OpenVMS VAX systems. The User's Guide is intended for anyone who wants to print, track, delete, or modify jobs on a remote printer in the network.

3. Related Documents

Refer to the following documents for additional information:

- *Distributed Queuing Service System Manager's Guide*
- *Distributed Queuing Service for OpenVMS Systems Installation Guide*

4. VSI Encourages Your Comments

You may send comments or suggestions regarding this manual or any VSI document by sending electronic mail to the following Internet address: <docinfo@vmssoftware.com>. Users who have VSI OpenVMS support contracts through VSI can contact <support@vmssoftware.com> for help with this product.

5. OpenVMS Documentation

The full VSI OpenVMS documentation set can be found on the VMS Software Documentation webpage at <https://docs.vmssoftware.com>.

6. Conventions

Table 1 lists the conventions used in this guide.

Table 1. Conventions

| Convention | Meaning |
|--------------------------|--|
| OpenVMS system | Means both the OpenVMS AXP operating system and the OpenVMS VAX operating system. |
| UPPERCASE TEXT | Indicates the name of a command, a file, a parameter, a procedure, or utility. |
| \$ PRODUCT | In interactive examples, prompts or displayed text appears in a monospace font. User input appears in a bold monospace font. |
| <i>lowercase italics</i> | Indicates variables in command syntax or examples for which the user supplies a value. |
| Ctrl/x | In interactive examples, a sequence such as Ctrl/x indicates that you must hold down the Ctrl key while you press another key or a pointing device button; for example, Ctrl/C or Ctrl/Z. |
| Return | Indicates the Return key. |
| [] | In command formats, square brackets encloses optional values. (Do not type the brackets.) In installation prompts, square brackets enclose a default value. In a file specification, square brackets serve as delimiters for a directory name. |

Chapter 1. Using the DQS Software

This chapter:

- Provides an overview of the Distributed Queuing Service for OpenVMS Systems software
- Explains how to get help when using the DQS commands

1.1. Understanding the Software

What DQS Can Do for You

The Distributed Queuing Service for OpenVMS Systems is a software product that enables you to:

- Print files on printers connected to remote systems in your network.
- Show the status of your print jobs on remote systems.
- Delete your print jobs from remote systems.
- Set the characteristics of your print jobs on remote systems.

Using DQS software, you can:

- Print files on any printer in your network.
- Take advantage of special printers that might not be physically connected to your local system.
- Print files even if your system has no printers connected.
- Distribute reports efficiently to remote sites within your company or organization through both local and wide area networks.

What You Need to Know

If you know how to print files on OpenVMS systems, you know how to use most DQS features. The DQS commands (PRINT, QSHOW, QSET, and QDELETE) look and function the same as the Digital Command Language (DCL) PRINT, SHOW, SET, and DELETE commands.

To use DQS software, you do not need to log in to a remote system, copy files across a network, or have proxy access or special privileges. You do not need to consider whether a print queue is local or remote.

How DQS Works

This is what happens when you print using the DQS software:

| Stage | Description |
|-------|--|
| 1 | You issue a PRINT command and queue the job to a remote system. The remote system does not have to be reachable at the time. |

| Stage | Description |
|-------|--|
| 2 | The DQS software keeps trying until it establishes a DECnet link to the remote system and transfers the print job to the remote system. |
| 3 | After job transfer, you can request status information, modify the print request, or delete the print job. |
| 4 | DQS software establishes a DECnet link to the remote system and executes your request. The remote system must be available for DQS software to complete the request. |
| 5 | The job prints on the remote printer. DQS software notifies you that the job has printed, if you include the /NOTIFY qualifier on the PRINT command. |

Some DQS Terms

Some terms used in this guide in connection with the DQS software are:

- Client — the system at which a you reside
- Server — the system to which the printer is connected
- Client queue — the queue you use locally
- Remote queue — the queue on the server that feeds the printer

DQS software moves print jobs from client queues (on clients) to corresponding remote queues (on servers).

For more information on the differences between DQS commands and corresponding DCL commands, use this manual or the OpenVMS HELP facility.

For more information on how to print files, refer to the descriptions of the PRINT, SHOW QUEUE, DELETE/ENTRY, and SET QUEUE /ENTRY commands in the *OpenVMS DCL Dictionary* .

1.2. Getting Help With DQS

The HELP Command

To get help with the DQS commands, you can use the standard OpenVMS HELP facility. Enter:

```
$ HELP command
```

Where, *command* is DQS or the PRINT, QSHOW, QDELETE, or QSET command verb.

Example

For example, if you enter the following command, text displays on your terminal that explains how to use the DQS QSHOW command.

```
$ HELP QSHOW Return
QSHOW
```

```
Displays information about queues and jobs that are currently in
queues. If the queue is a DQS client queue, QSHOW also displays the
remote queues associated with the client queue.
```


- o Display characteristic names and numbers that are available on queues (see /CHARACTERISTICS).
- o Display form names and numbers that are available on queues (see /FORM).

Format:

QSHOW [queue-name]

Additional information available:

Parameters Command_Qualifiers

/ALL /BATCH /BRIEF /DEVICE /FILES /FULL /OUTPUT

/CHARACTERISTICS /FORM

QSHOW Subtopic?

Chapter 2. Printing Files Using DQS Software

This chapter:

- Explains the DQS printing process in basic and multinode networks
- Shows examples of messages you receive when you enter a DQS print job
- Explains requirements for printing with forms
- Lists differences between DQS PRINT qualifiers and DCL PRINT qualifiers
- Lists some status and error messages you may see

If you need more information on how to use the Digital Command Language (DCL) PRINT command and its qualifiers, refer to the *OpenVMS DCL Dictionary*.

2.1. Printing in Network Environments

Basic Network Example

Assume that your site has a network of two systems, APPLE and BANANA:

- Node APPLE has an attached Print Server 17/600 printer.
- The Print Server 17/600 queue on APPLE is named Q_CHICAGO.
- Node BANANA has no attached printer.

Without DQS Software

Without DQS software, from node APPLE, you can print a file named TRIP_REPORT.TXT on your own system by entering this PRINT command line at the DCL prompt (\$):

```
$ PRINT TRIP_REPORT.TXT/QUEUE=Q_CHICAGO Return
```

Node BANANA users cannot use the printer on node APPLE.

With DQS Software

If DQS software is installed on both nodes, node APPLE can function as a server; that is, APPLE's printer can serve users of both systems. Node BANANA is then the DQS client.

Assume that your system manager defined a client DQS queue for node BANANA that corresponds to the queue Q_CHICAGO on APPLE. From node BANANA, to queue your file to print on node APPLE, you enter the identical command line:

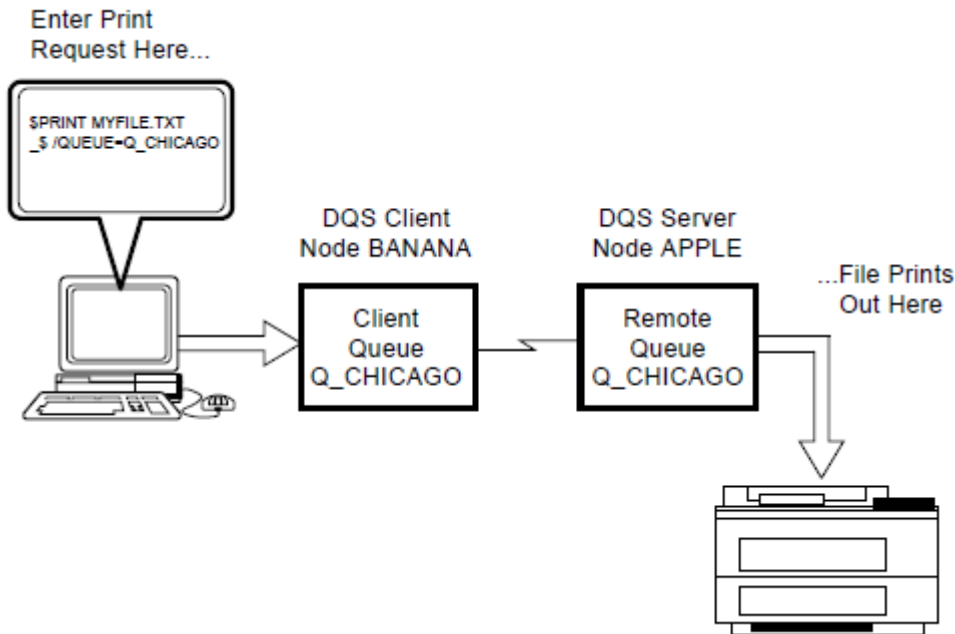
```
$ PRINT TRIP_REPORT.TXT/QUEUE=Q_CHICAGO Return
```

If the generic queue SYSS\$PRINT is defined as Q_CHICAGO, users can print files by entering PRINT *file-name*.

Basic Configuration

Figure 2.1 illustrates how the system manager configures DQS software in this basic network.

Figure 2.1. Basic DQS Configuration



Multinode Network Example

DQS software can be installed on networks of any size.

Figure 2.2 illustrates a slightly more complex DQS configuration consisting of three nodes: APPLE, BANANA, and CHERRY:

- Node APPLE has an attached Print Server 17/600 printer named Q_CHICAGO.
- Node CHERRY has an attached LN06 printer named Q_PARIS.
- Node BANANA has no attached printer.

DQS can be installed on all three nodes. Nodes APPLE and CHERRY can function as servers; that is, their printers can serve users of other systems. All three nodes can be clients; that is, they can use the printers of the server systems.

Printing in Multinode Network

Your system manager can define client DQS queues for all three systems that send print jobs to the remote queues Q_CHICAGO and Q_PARIS. For example, your system manager can define the following (see Figure 2.2):

| Define client queues: | On client node: | To send print jobs to remote queues: | On server nodes: |
|-----------------------|-----------------|--------------------------------------|------------------|
| CQ_EUROPE | APPLE | Q_PARIS | CHERRY |

| Define client queues: | On client node: | To send print jobs to remote queues: | On server nodes: |
|-----------------------|-----------------|--------------------------------------|------------------|
| CQ_FRANCE | BANANA | Q_PARIS | CHERRY |
| CQ_ILLINOIS | BANANA | Q_CHICAGO | APPLE |
| CQ_USA | CHERRY | Q_CHICAGO | APPLE |

Then, from node APPLE, for example, you can queue your file to print on the LN06 printer on node CHERRY by entering:

```
$ PRINT TRIP_REPORT.TXT/QUEUE=CQ_EUROPE Return
```

From node BANANA you can queue your file to print on the LN06 printer on node CHERRY by entering:

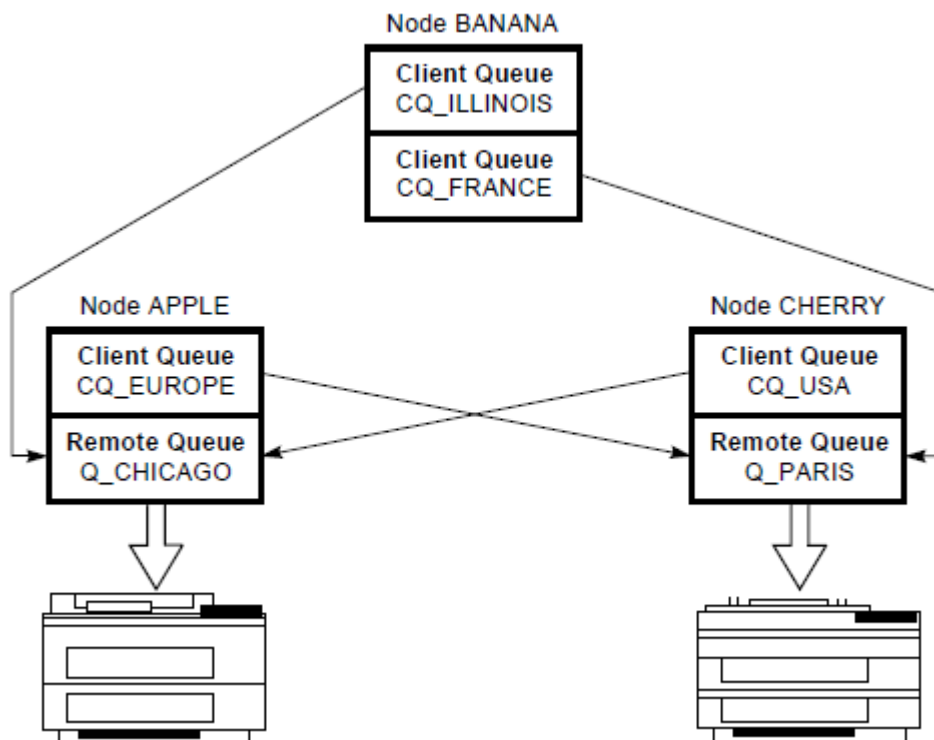
```
$ PRINT TRIP_REPORT.TXT/QUEUE=CQ_FRANCE Return
```

In both examples, the print job, TRIP_REPORT.TXT, is sent to the remote queue Q_PARIS on the server node CHERRY for printing.

Multinode Configuration

Figure 2.2 illustrates how the system manager configures DQS software in this multinode network.

Figure 2.2. Multinode DQS Configuration



Advantages of DQS Printing

With DQS software, you can choose to print files on the printer that is most convenient to your location. You can take advantage of different types of printers as necessary. You can also direct output to printers you know are idle.

2.2. Understanding Print Job Messages

Status Messages

When you queue a file to be printed, you receive one of two acknowledgment messages:

- If the client queue is empty, you see a message that indicates that the file is being transferred to the server node for printing. For example:

```
Job MARCH-INVOICE (queue CLIENT, entry 806) started on CLIENT
```

- If the client queue is not empty, you see a message like this:

```
Job MARCH-INVOICE (queue CLIENT, entry 810) pending
      pending status caused by queue busy state
```

The messages list the client queue, in this case `CLIENT`, and the client job number.

As with the DCL software, these messages are sent by default. You can suppress default messages by using the `/NOIDENTIFY` qualifier with the `PRINT` command.

Print Job Entry Numbers

When you queue a file to print, the DQS software displays the job entry number of the client (that is, your) system. Job numbers printed on the header, burst, or trailer pages are client job numbers, if the DQS print symbiont or the DECprint Supervisor for OpenVMS software runs the server's printer. Otherwise, the job numbers are server job numbers.

2.3. Printing with Forms

Requirements

Before the DQS software transfers a print job, it checks on the form being used.

- If the form exists on both the client and the server, the file is printed.
- If the form does not exist on the client, the job cannot be queued.
- If the form does not exist on the server, the job terminates with an error and remains in the queue until you delete or requeue it.

If you queue a job with a form that is not mounted on the client, the queue manager mounts the form before the software transfers the job. This can take several minutes.

If you queue a job with a form that is not mounted on the server, the job does not print until the operator mounts the form.

2.4. Using PRINT Command Qualifiers

DQS Qualifier Differences

Most of the qualifiers to the `PRINT` command function the same with DQS printing as they do with standard OpenVMS printing. Qualifiers that function differently with DQS printing are described in Table 2.1.

Table 2.1. PRINT Command Qualifiers That Function Differently with DQS Printing

| Qualifier | Function Without DQS | Function With DQS |
|--------------------------------------|--|---|
| <i>/AFTER=time</i> | Prints job after specified time. | Transfers job to the server after specified time. |
| <i>/DELETE</i> | Deletes file after printing. | Deletes file on the client after transfer to the server (files are always deleted from the server's disk after printing). |
| <i>/FORM=type</i> | Uses form <i>type</i> . | Uses form <i>type</i> . <ul style="list-style-type: none"> • The form name must be defined on both the DQS client and server. • If the form is not mounted on the client, the queue manager software mounts it (this may take several minutes). • If the form is not defined on the server, the job does not transfer, but remains in the queue with error status %JBC-FNOSUCHFORM. • If the form is defined differently on server and client, the job is printed with the server form. |
| <i>/HEADER</i> | Specifies whether header page prints with file. | Specifies whether header page prints with file. The header page includes server node and device in the file specification; the version number of the file specification may differ. |
| <i>/HOLD</i> | Holds job until released (by SET/ENTRY/RELEASE command). | Does not transfer job to server until released (by QSET/ENTRY/RELEASE command). |
| <i>/NOTIFY</i> | Broadcasts message to you after job prints. | Broadcasts messages to you after job transfers and after job prints. |
| <i>/OPERATOR=string</i> | Sends string to operator when job begins to print. | Sends string to operators on both client and server when job begins to print. |
| <i>/PARAMETERS=(parameter[,...])</i> | Passes from 1 to 8 optional parameters to job. | Passes from 1 to 7 optional parameters to job. DQS software reserves parameter 8 for its own use. If you specify parameter 8, DQS software generates an error, and leaves the job in the client queue with an error status of DQS-F-P8RESERVED. |
| <i>/PRIORITY=n</i> | Specifies priority of print job. | Specifies priority of print job. Priority limits are configured on the server for all client users. You can request any print priority, but the server queues your job with no more than the specified maximum priority. |
| <i>/SETUP=module[,...]</i> | Extracts specified modules from device control library. | Extracts specified modules from device control library on the server; the client |

| Qualifier | Function Without DQS | Function With DQS |
|-----------|----------------------|--|
| | | system's device control libraries need not be defined. |

Examples

For example, to transfer a file to the printer queue on node CHERRY from the client queue CQ_EUROPE on node APPLE after 11:30 in the morning, use the /AFTER qualifier:

```
$ PRINT CHANGES.PS/QUEUE=CQ_EUROPE/AFTER=11:30 Return
Job CHANGES (queue CQ_EUROPE, entry 324) holding until 30-JUL-1994 11:30
```

If you want to be notified after your print job is transferred and completes, use the /NOTIFY qualifier. For example:

```
$ PRINT CHANGES.PS/QUEUE=CQ_EUROPE/NOTIFY Return
Job CHANGES (queue CQ_EUROPE, entry 548) started on queue CQ_EUROPE
Job CHANGES (queue EUROPE, entry 548) completed
```

```
Print job CHANGES (queue CQ_EUROPE, entry 548) completed at 30-JUL-1994
 10:24
$
```

Each "completed" message means something different.

- The first indicates that the file transfer is complete.
- The second indicates that the job printed on the server node.

The messages may not appear immediately; the actual timing depends on the system load and backlog in the queues.

2.5. Understanding PRINT Command Error Messages

Error Messages

If a DQS print job in a client queue fails to transfer to the server, the job remains in the client queue with the message "terminated with error status" and an associated error status. To examine the error status, use the QSHOW command (see Chapter 3).

If you specify the /NOTIFY qualifier, you receive an error message when your print job fails to transfer. For example:

```
Job TRIP_REPORT (queue CQ_ILLINOIS, entry 341) terminated with error
status
%status, message-text
```

You must either delete the job or release it for another try. The QDELETE/ENTRY command (for deleting jobs from a queue) is described in Chapter 4.

Common DQS Error Messages

Following are some common DQS error messages with an explanation and a recovery action.

- **%DQS-F-BADQUEUE**—The remote queue on the server system is not accessible to DQS clients. Ask the system manager to modify the remote queue on the server system. (The `DQSSQUEUE_remote-queue` logical name needs to be defined.)
- **%JBC-F-NOSUCHFORM**—You specified a form that is not defined on the server. Enter the job again, using a different form or specifying a queue where the form is defined.
- **%DQS-F-P8RESERVED**—You used the `/PARAMETERS` qualifier and specified all eight parameters. Reenter the print request with less than eight parameters.

Refer to Appendix A for a complete list of messages.

Chapter 3. Viewing the Status of Print Jobs

This chapter:

- Compares the DQS QSHOW command with the DCL SHOW QUEUE command
- Describes how to check the status of a print job using the QSHOW command and how to interpret the associated output
- Compares QSHOW qualifiers with DCL SHOW QUEUE qualifiers
- Explains QSHOW error messages

3.1. The QSHOW Command

Comparison with DCL Command

| This command . . . | Enables you to . . . |
|--------------------|---|
| DCL SHOW QUEUE | Display the status of queues on your local system. |
| DQS QSHOW | Display the status of both local and remote print queues. |

Using the DCL SHOW QUEUE command to view the status of a DQS client queue works, but it does not show the status of the associated remote queue. For that information, use the QSHOW command. You can use the QSHOW command to examine both client (local) and server (remote) queues.

3.2. Checking the Status of a Print Job

QSHOW Command

To check the status of a print job, enter the following command at the DCL prompt on the client node:

```
$ QSHOW client-queue-name Return
```

Sample Output

The following examples use the same node names and queues used in the DQS client/server examples from Chapter 2.

For example, you are working on node APPLE, and you queued the file TRIP_REPORT.P S to the client queue CQ_EUROPE to print on the printer on node CHERRY. To check the status of your print job, enter:

```
$ QSHOW CQ_EUROPE Return
```

The command output may look like this:

```
** Remote queue - [ CQ_EUROPE => Q_PARIS, on CHERRY:: ]
Printer queue Q_PARIS, on CHERRY::
      Jobname      Username      Entry      Blocks      Status
```

```

-----
      (5 intervening jobs containing 2019 blocks)
TRIP_REPORT JONES 1229 98 Pending
=====to be transferred=====
Server queue CQ_EUROPE, on APPLE::, mounted form LN06_DEFAULT
  (stock=DEFAULT)

```

The information in this example tells you:

- The name of the client node is **APPLE**. The name of the server node is **CHERRY**.
- The queue shown as the "server queue" is the client queue **CQ_EUROPE** on node **APPLE**. ("Server" refers to the OpenVMS concept of server queues, not the DQS concept of server nodes.)
- The queue shown as "remote queue" is the remote queue **Q_PARIS** on node **CHERRY**.
- Five print jobs are currently ahead of yours in the remote queue. They total 2019 blocks of data. You can use this information to estimate how long before your job prints.
- Your print job is in the remote queue on node **CHERRY** awaiting printing (status "Pending"). If your job is printing, the status is "Printing."
- The form on the client queue is named **LN06_DEFAULT**. You are informed if the client queue is stopped or stalled.
- You have no jobs awaiting transfer to the server. Like the **DCL SHOW QUEUE** command, the **DQS QSHOW** command normally shows only your jobs, unless you are a privileged user and you specify the **/ALL** qualifier. In any event, you cannot see other users' jobs in the client queue, unless the queue is world readable.

If you queue another job and check the status, you may get results like this:

```

$ QSHOW CQ_EUROPE Return

** Remote queue - [ CQ_EUROPE => Q_PARIS, on CHERRY:: ]
Printer queue Q_PARIS, on CHERRY::

Jobname      Username      Entry      Blocks      Status
-----
=====to be transferred=====
Server queue CQ_EUROPE, on APPLE::, mounted form LN06_DEFAULT
  (stock=DEFAULT)
  TRIP_REPORT JONES 1234 98 Processing

```

This example indicates that your job is in the process of being transferred to the server node **CHERRY**. If jobs are ahead of yours in the client queue on node **APPLE**, the status is "Pending".

3.3. Using QSHOW Command Qualifiers

DQS QSHOW Qualifiers

The **DQS QSHOW** command uses the same qualifiers as the **DCL SHOW QUEUE** command, plus one more.

QSHOW also uses the qualifier **/QUEUE= *queue-name*** to support the **/FORM** and **/CHARACTERISTICS** qualifiers.

/FORM Qualifier

- To show the forms available on a local system, enter this DCL command line:

```
$ SHOW QUEUE/FORM Return
```

- To show the forms available on the DQS client and server systems, enter:

```
$ QSHOW /QUEUE=queue-name /FORM Return
```

/FORM Example

In this example, CQ_EUROPE is used as the *queue-name*:

```
$QSHOW /QUEUE=CQ_EUROPE /FORM Return
```

You see output like the following:

```
Remote node CHERRY::
Form name                Number      Description
-----                -
A4_12 (stock=PLAIN_PAPER)  1129      A4 12-Pitch with margins
DCPS$DEFAULT (stock=DEFAULT)  1115      DCPS default

Local node APPLE::
Form name                Number      Description
-----                -
A4_12 (stock=PLAIN_PAPER)  1129      A4 12-Pitch with margins
DCPS$DEFAULT (stock=DEFAULT)  1115      DCPS default
DEFAULT                    0         System-defined default
KPS$DEFAULT (stock=DEFAULT)  1183      KPS default
LANDSCAPE (stock=DEFAULT)    10        132 by 66 (landscape)
LASERWRITER (stock=DEFAULT)  30        APPLE LASERWRITER
LCG01$FORM (stock=DEFAULT)   455      LCG01
LN01S (stock=DEFAULT)        60        64000 by 66 (LN0S )
LPS$$FORM                  1105      PostScript Default
LTR_10 (stock=PLAIN_PAPER)   1124      10-Pitch, no margins
LTR_12 (stock=PLAIN_PAPER)   1127      12-Pitch with margins
PORTRAIT (stock=DEFAULT)     20        80 by 60 (portrait)
PSBLASER (stock=DEFAULT)     47        postscript laser
PS_PLAIN (stock=PLAIN_PAPER)  1132      PostScript (Macintosh)
WPSPLUS (stock=DEFAULT)     1101      WPS-PLUS/VMS
$
```

The QSHOW command lists the forms mounted on both the client and the server nodes, referred to as "local" and "remote" nodes, respectively, in the command output.

3.4. Understanding QSHOW Error Messages

QSHOW Error Messages

The DQS QSHOW command uses the same error messages as the DCL SHOW QUEUE command. In addition, the QSHOW command has its own messages for handling problems unique to the DQS software.

Server Unreachable

For example, if the server node is not currently reachable, the DQS software cannot check the status of the remote queue. You receive an explanation of the problem, like the following:

```
$ QSHOW CQ_EUROPE Return
***** Remote queue CHERRY::Q_PARIS not accessible *****
      %SYSTEM-F-UNREACHABLE, remote node is not currently reachable
=====to be transferred=====
Server queue CQ_EUROPE, stalled, mounted form DEFAULT
  Jobname      Username      Entry      Blocks      Status
  -----      -
  TRIP_REPORT  JONES        1366       98          Processing
  Q2-FINANCIALS JONES        1367       1           Pending
```

Invalid Remote Queue

Another possible error is that the remote queue is defined incorrectly. DQS software displays the following messages:

```
$ QSHOW CQ_EUROPE Return
%DQS-W-MSG_REMOTE, Remote system error:
-DQS-F-BADQUE, Specified queue not valid for DQS access.
=====to be transferred=====
Server queue CQ_EUROPE, stopped, mounted form DEFAULT
Remote system error: Specified queue not valid for DQS access.
  Jobname      Username      Entry      Blocks      Status
  -----      -
  Q2-FINANCIALS JONES        1467       1           Pending
```

In this case, either the system manager on the server node must redefine the remote queue or the system manager on the client node must redirect the client queue to a valid remote queue.

Refer to Appendix A for a complete list of messages.

Chapter 4. Deleting Print Jobs From a Queue

This chapter:

- Compares the DQS QDELETE/ENTRY command with the DCL DELETE/ENTRY command
- Describes how to delete a print job using the QDELETE/ENTRY command
- Lists some QDELETE/ENTRY error messages

4.1. The QDELETE/ENTRY Command

Comparison with DCL Command

| This command . . . | Enables you to . . . |
|--------------------|--|
| DCL DELETE/ENTRY | Delete a job from a local queue. |
| DQS QDELETE/ENTRY | Delete either locally or remotely queued print jobs. |

The QDELETE/ENTRY command functions exactly like the DELETE/ENTRY command. (These commands do not delete files; they only remove jobs from a print queue.) You can use the DQS QDELETE/ENTRY command instead of the DCL DELETE/ENTRY command for all your print jobs.

4.2. Deleting a Print Job

To delete a print job, you must know:

- The name of the queue from which you want to delete the job
- The job's entry number in the queue

The PRINT command displays this information by default when you queue a file for printing. You can also obtain this information by using the QSHOW command (see Chapter 3).

Example

For example, if you queued the file TRIP_REPORT.P S to client queue CQ_EUROPE to print on node CHERRY, and the job is entry 1024, delete the print job by entering:

```
$ QDELETE/ENTRY=1024 CQ_EUROPE Return
```

The DQS software removes the job from the client queue. If the job has already transferred to the remote queue, the DQS software removes the job from the remote queue.

/NOTIFY Qualifier

If you specify the /NOTIFY qualifier when you queue the job for printing, the DQS software notifies you when the job is deleted.

```
$ QDELETE/ENTRY=341 CQ_EUROPE /NOTIFY Return
Print job TRIP_REPORT (queue CQ_EUROPE, entry 341) deleted
```

4.3. Understanding QDELETE Error Messages

QDELETE Error Messages

The DQS QDELETE command uses the same error messages as the DCL DELETE command. In addition, the QDELETE command has its own messages for handling problems unique to the DQS software.

Server Unreachable

If the server node is not currently reachable, the QDELETE/ENTRY command fails and you receive an explanation, like the following:

```
$ QDELETE/ENTRY=1067 CQ_EUROPE Return
%DQS-I-NOJOBDELETED, No jobs deleted
%DQS-I-INACCESSIBLE, Remote queue CHERRY::Q_PARIS
is inaccessible
```

Invalid Remote Queue

If you use the QDELETE/ENTRY command to delete a job from a queue on a remote system that is not defined as a valid DQS remote queue, DQS software displays messages like the following:

```
$ QDELETE/ENTRY=1194 CQ_CANADA Return
%DQS-W-MSG_REMOTE, Remote system error:
-DQS-F-BADQUE, Specified queue not valid for DQS access.
```

In this case, either the system manager on the server node must redefine the remote queue or the system manager on the client node must redirect the client queue to a valid remote queue.

Refer to Appendix A for a complete list of messages.

Chapter 5. Modifying the Characteristics of a Job

This chapter:

- Compares the DQS QSET/ENTRY command with the DCL SET/ENTRY command
- Describes how to modify a print job using the QSET/ENTRY command
- Describes the DQS command qualifiers with modified behavior
- Lists some QSET error messages

5.1. The QSET/ENTRY Command

Comparison with DCL Command

| This command . . . | Enables you to . . . |
|--------------------|---|
| DCL SET/ENTRY | Change the current status or attributes of a job that is not currently executing in a queue. |
| DQS QSET/ENTRY | Changes the current status for either locally or remotely queued print jobs not executing in a queue. |

You can use the DQS QSET/ENTRY command for modifying all your print jobs. You must specify a queue name with the QSET/ENTRY command.

5.2. Modifying a Print Job

Before you can modify a print job, you need to know:

- The name of the queue that contains the job you want to modify
- The job's entry number in that queue

The DQS PRINT command displays this information by default when you queue a file for printing. You can also obtain this information by using the QSHOW command (described in Chapter 3).

QSET/ENTRY Example

For example, you queued the file CHANGES.PS to client queue CQ_EUROPE to print on node CHERRY and requested two copies, as follows:

```
$ PRINT CHANGES.PS/QUEUE=CQ_EUROPE/COPIES=2 Return
Job CHANGES (queue CQ_EUROPE, entry 1324), pending
```

Now you change your mind and want three copies. You can modify the job by entering:

```
$ QSET/ENTRY=1324 CQ_EUROPE/COPIES=3 Return
```

The DQS software modifies the job in the client queue. If the job already transferred to the remote queue, the DQS software modifies the job in the remote queue. However, DQS software cannot modify a job that is moving from a client queue to a remote queue or a job that is actually printing.

5.3. Using QSET Command Qualifiers

QSET Qualifier Differences

Most of the qualifiers to the QSET/ENTRY command act the same as they do with the standard DCL SET/ENTRY command. Those qualifiers that have modified functions when used with the QSET/ENTRY command are described in Table 5.1.

Table 5.1. QSET/ENTRY Command Qualifiers That Function Differently with DQSPrinting

| Qualifier | Function Without DQS | Function With DQS |
|--|--|--|
| /AFTER= <i>time</i> | Prints job after specified time. | Transfers job to the server after specified time. If already transferred, prints job after specified time. |
| /FORM= <i>type</i> | Uses form <i>type</i> . | Uses form <i>type</i> ; form name or number must be defined on both client and server. |
| /HEADER | Specifies whether header page prints with file. | Specifies whether header page is printed with file. Page displays server node and device in the file specification; file version number may differ. |
| /HOLD | Holds job until released (by SET/ENTRY/RELEASE command). | Does not transfer job to server until released. If already transferred, does not print until released (by QSET/ENTRY/RELEASE command). |
| /NODELETE | Cancels file deletion for job queued with /DELETE qualifier. | While job is still in client queue, this qualifier works correctly; after the job is transferred to the remote queue, command fails and returns an error. |
| /PARAMETERS= (<i>parameter</i> [,...]) | Passes from 1 to 8 optional parameters to job. | Passes from 1 to 7 optional parameters to job. DQS software reserves parameter 8 for its own use. If you specify parameter 8, the command fails and returns an error. |
| /PRIORITY= <i>n</i> | Specifies priority of print job. | Specifies priority of print job. Priority limits are configured on the server for all client users. You can request any print priority, but the server queues your job with no more than the specified maximum priority. |
| /REQUEUE= <i>queue-</i> <i>name</i> [:] | Queues job to another printer queue. | If the job has not yet transferred to the server node, you can requeue it to any other queue. If the job already transferred (but has not printed), you can requeue it to another queue on the same server. |

5.4. Understanding QSET Error Messages

QSET Error Messages

If the QSET/ENTRY command fails, the job's specifications are unchanged and the DQS software returns an error message. Some common messages are:

- If the server node is not currently reachable, the QSET/ENTRY command fails and returns the following messages:

```
%DQS-I-NOJOBSET, no jobs set
%DQS-I-INACCESSIBLE, remote queue queue is inaccessible
```

- If you specify a queue that points to an invalid remote queue, the command fails and returns the following messages:

```
%DQS-W-MSG_REMOTE, remote system error:
-DQS-F-BADQUEUE, specified queue not valid for DQS access
```

The server node system manager must modify the remote queue.

- If you try to modify a job while it is being transferred from the client queue to the remote queue, the request fails with an error status:

```
%JBC-E-EXECUTING
```

- If you specify a form that is not defined on the client, the command fails and returns the error status:

```
%JBC-E-NOSUCHFORM
```

- If you attempt to modify the status of a print job with the QSET /ENTRY/NODELETE command after the job has transferred to the remote queue, the command fails and returns the following messages:

```
%DQS-W-MSG_REMOTE, remote system error:
-DQS-E-NODELETE, /NODELETE is allowed only on local jobs
%DQS-I-NOJOBSET, no jobs set
```

- If you use the /PARAMETERS qualifier and specify eight parameters for a job that already transferred, the command fails and returns the following messages:

```
%DQS-W-MSG-REMOTE, remote system error:
-DQS-F-P8RESERVED, parameter 8 is reserved for DQS on remote systems
%DQS-I-NOJOBSET, no jobs set
```

Refer to Appendix A for a complete list of messages.

Chapter 6. Spooling Files to a Client Queue

Spooling Files

The OpenVMS operating system allows you to assign a logical device in a source program to a physical device. To spool files to a client queue:

1. The system manager creates a LAT port and sets the LAT port spooled to the DQS client queue.
2. You specify the LAT port in a source program as the physical device.

DQS software places the print output in a temporary file, enters the file in the client queue, then transfers the file to the corresponding remote queue.

Example

In a FORTRAN program, the statement PRINT directs output to the terminal unless otherwise directed to a logical device. If the LAT port is spooled to a client queue, you can direct program output to a remote printer.

For example, if the LAT port LTA999: is spooled to client queue CQ_USA (that is, the system manager used the command line SET DEVICE LTA999/SPOOLED=CQ_USA), you can spool output to the remote printer by entering:

```
$ DEFINE FOR$PRINT LTA999: Return
```

When you execute your FORTRAN program, its output is spooled from LTA999 to the client queue CQ_USA.

Colon Required

The colon following LTA999: is mandatory. If omitted, the file, LTA999.LIS is created in the current directory.

Appendix A. DQS User Messages

This appendix lists error and diagnostic messages issued by the Distributed Queuing Service for OpenVMS Systems (DQS) software. Each message includes a description and, where appropriate, corrective actions that you can take.

DQS Message Format

Most DQS messages follow the same format as standard OpenVMS system messages and appear as follows:

```
%DQS-l-ident, text
```

Where:

- *l* is the severity level of the message, such as -W-, for a warning message.
- *ident* is the message identification, such as NOACCESS.
- *text* is the message text, such as "specified node does not have access to this server".

DQS messages use the same severity codes as OpenVMS system messages: S, I, W, E, and F.

DQS messages that concern the management and configuration of the DQS software are documented in Appendix A, in *Distributed Queuing Service System Manager's Guide*.

Refer to the *OpenVMS System Messages and Recovery Procedures Reference Manual* for an explanation of the format and a definition of severity codes for OpenVMS system messages.

A.1. Message Section

Notification Messages

The DQS software can return the following notification messages (these messages do not follow the standard OpenVMS message format).

Print job *file-name* (queue *queue-name*, entry *job-number*) terminated with error status at *date / time*

Explanation: Your print job has not successfully printed on the server node. A secondary error message is displayed describing the reason why the error occurred.

User Action: Rectify the problem based on the reason given in the secondary error message.

Print job *file-name* (queue *queue-name*, entry *job-number*) completed at *date / time*

Explanation: None, this message is informational.

User Action: Retrieve your print job.

DQS Message Definitions

Because all DQS messages have the same prefix %DQS- *l*-, the messages in this section are listed alphabetically according to their message *ident*.

BADNODE, specified node has been denied access to this server.

Explanation: The remote node for your queue is not accessible from your client.

User Action: Contact your system manager.

BADQUE, specified queue not valid for DQS access.

Explanation: The remote queue on the server is not accessible by DQS clients.

User Action: Contact your system manager.

BAD_REMOTE_NAME, *logical-name* must be defined for this queue.

Explanation: The remote system name has been specified incorrectly.

User Action: Contact your system manager.

CHECKPOINTED, job was checkpointed.

Explanation: Your print job was checkpointed and DQS could not remove the checkpoint.

User Action: Delete your job from the queue and resubmit it.

ENTRY_REQUIRED, /entry=number required.

Explanation: You did not specify the required /ENTRY= *number* qualifier in your QSET or QDELETE command.

User Action: Reenter the command using the /ENTRY= *number* qualifier, specifying the appropriate job entry number.

ERROROPENING, error opening *file-name* as input.

Explanation: The client's print symbiont could not open the specified file for the reason cited in the secondary error message that accompanies this message. This error message will be printed in the print output on the server. Usually, this message occurs when the file to be printed is deleted before the file is transferred by the client symbiont to the server.

User Action: Rectify the problem based on the reason given in the secondary error message.

ERRORREADING, error reading *file-name*.

Explanation: The client's print symbiont could not read the specified file for the reason cited in the secondary error message that accompanies this message.

User Action: Rectify the problem based on the reason given in the secondary error message.

INACCESSIBLE, remote queue *queue-name* is inaccessible.

Explanation: The server you are attempting to print to is not accessible.

User Action: The job will not be processed until the server is reachable. However, for QSHOW, QSET/ENTRY, or QDELETE/ENTRY command functions, you must wait until the server is available.

INCOMPROT, incompatible DQS Server and Client protocol versions.

Explanation: The version of DQS software on the client is incompatible with the version of DQS software on the server.

User Action: Contact your system manager.

INVLOGFIL, invalid log file.

Explanation: You specified an invalid log file in a QSET /ENTRY command. The reason for the error in your file specification is cited in the secondary error message that accompanies this message.

User Action: Correct the file specification and reenter the QSET/ENTRY command.

INVQUAVAL, value 'value' invalid for /qualifier-name qualifier.

Explanation: You specified an invalid value for the qualifier /qualifier-name.

User Action: Specify the proper value for the qualifier.

INVVER, versions of protocol do not match.

Explanation: The version of DQS software on the client is incompatible with the version of DQS software on the server to which you are attempting to queue your print job.

User Action: Contact your system manager.

JOBDELETED, number job(s) deleted.

Explanation: The QDELETE/ENTRY command you specified did not delete all of the jobs you specified, only the number of jobs specified by number .

User Action: Check the job number(s) for the job(s) you attempted to delete, as well as your access privileges for deleting those jobs, and reenter the command.

LONGNODENAME, Node name size problem due to DECnet /OSI fullname.

Explanation: The DQS symbiont received a node name (possibly from a daisy-chained queue) that is too long for the version of the OpenVMS operating system or the DECnet networking software to handle.

User Action: Notify your system manager of the problem. Systems need upgrading or DQS queues need to be reconfigured or both.

MSG_PE, protocol error.

Explanation: A protocol error indication was received. This error usually occurs when incompatible versions of DQS software reside on server and client systems.

User Action: Contact your system manager.

MSG_REMOTE, remote system error:

Explanation: An error occurred on the remote system and is described in the secondary error message that accompanies this message.

User Action: Rectify the problem based on the reason given in the secondary error message.

NOACCESS, specified node does not have access to this server.

Explanation: The client is not authorized to use the queue(s) on the server.

User Action: Contact your system manager.

NODELETE, /NODELETE is allowed only on local jobs.

Explanation: You cannot use the /NODELETE qualifier for a job that is not on your local node; that is, a job that has transferred to the server.

User Action: Do not use the /NODELETE qualifier for jobs that have transferred to the server.

NOJOBDELETED, no jobs deleted.

Explanation: The QDELETE/ENTRY command you specified did not delete any jobs.

User Action: Check the job number of the job you are attempting to delete, as well as your access privileges to delete the job, and try again.

NOJOBSET, no jobs set.

Explanation: The QSET/ENTRY command you specified did not set any jobs.

User Action: Check the job number of the job you are attempting to modify, as well as your access privileges to modify the job, and try again.

NOSUCHQUEUE, no such remote queue *queue-name*.

Explanation: The remote queue specified by *queue-name* does not currently exist on the server.

User Action: Contact your system manager.

NOTOWN, not owner of the job.

Explanation: You are not the owner of the job that you are attempting to delete or modify. The DQS software determines job ownership by the node name and user name with which the job was initiated.

User Action: Ensure that you have specified the correct job number and that you are working from the same account on the same client from which you initiated the job.

NO_ACCESS_CONTROL, no access control strings allowed in server node name.

Explanation: The remote system name has been specified incorrectly.

User Action: Contact your system manager.

NO_NODE_SPECIFIED, printer queue name does not specify a node.

Explanation: The remote system name has been specified incorrectly.

User Action: Contact your system manager.

NO_SET_LISTS, list of job numbers for SET not supported.

Explanation: You cannot specify a sequence of job numbers in a QSET/ENTRY command, such as /ENTRY=(1,2,3).

User Action: Issue a separate QSET/ENTRY command for each job.

P8RESERVED, parameter 8 (P8) is reserved for DQS on remote systems.

Explanation: You attempted to specify P8 when issuing a PRINT command to a DQS queue. Parameter 8 is reserved for DQS information.

User Action: Do not specify P8 when using DQS queues. Instead add your P8 arguments to parameters 1 through 7.

REC_MSG, received message: "*message*".

Explanation: The server is running an old version of DQS software.

User Action: Contact your system manager.

REINSTALL, install new DQS software.

Explanation: The version of DQS software on the client is incompatible with the version of DQS software on the server.

User Action: Contact your system manager.

REQNOEXIST, requeue remote does not exist on remote system.

Explanation: The queue you specified with a QSET/ENTRY /REQUEUE= *queue-name* command does not exist. You can only requeue to a queue that is on the same remote system as the print job.

User Action: Requeue your job to another remote queue, or delete the job and submit a new job to a valid remote queue.

