

## NAME

oqmgr – old Postfix queue manager

## SYNOPSIS

**oqmgr** [generic Postfix daemon options]

## DESCRIPTION

The **oqmgr**(8) daemon awaits the arrival of incoming mail and arranges for its delivery via Postfix delivery processes. The actual mail routing strategy is delegated to the **trivial-rewrite**(8) daemon. This program expects to be run from the **master**(8) process manager.

Mail addressed to the local **double-bounce** address is logged and discarded. This stops potential loops caused by undeliverable bounce notifications.

## MAIL QUEUES

The **oqmgr**(8) daemon maintains the following queues:

### **incoming**

Inbound mail from the network, or mail picked up by the local **pickup**(8) agent from the **maildrop** directory.

**active** Messages that the queue manager has opened for delivery. Only a limited number of messages is allowed to enter the **active** queue (leaky bucket strategy, for a fixed delivery rate).

### **deferred**

Mail that could not be delivered upon the first attempt. The queue manager implements exponential backoff by doubling the time between delivery attempts.

### **corrupt**

Unreadable or damaged queue files are moved here for inspection.

**hold** Messages that are kept "on hold" are kept here until someone sets them free.

## DELIVERY STATUS REPORTS

The **oqmgr**(8) daemon keeps an eye on per-message delivery status reports in the following directories. Each status report file has the same name as the corresponding message file:

**bounce** Per-recipient status information about why mail is bounced. These files are maintained by the **bounce**(8) daemon.

**defer** Per-recipient status information about why mail is delayed. These files are maintained by the **defer**(8) daemon.

**trace** Per-recipient status information as requested with the Postfix "**sendmail -v**" or "**sendmail -bv**" command. These files are maintained by the **trace**(8) daemon.

The **oqmgr**(8) daemon is responsible for asking the **bounce**(8), **defer**(8) or **trace**(8) daemons to send delivery reports.

## STRATEGIES

The queue manager implements a variety of strategies for either opening queue files (input) or for message delivery (output).

### **leaky bucket**

This strategy limits the number of messages in the **active** queue and prevents the queue manager from running out of memory under heavy load.

### **fairness**

When the **active** queue has room, the queue manager takes one message from the **incoming** queue and one from the **deferred** queue. This prevents a large mail backlog from blocking the delivery of new mail.

### **slow start**

This strategy eliminates "thundering herd" problems by slowly adjusting the number of parallel deliveries to the same destination.

### **round robin**

The queue manager sorts delivery requests by destination. Round-robin selection prevents one destination from dominating deliveries to other destinations.

### **exponential backoff**

Mail that cannot be delivered upon the first attempt is deferred. The time interval between delivery attempts is doubled after each attempt.

### **destination status cache**

The queue manager avoids unnecessary delivery attempts by maintaining a short-term, in-memory list of unreachable destinations.

## **TRIGGERS**

On an idle system, the queue manager waits for the arrival of trigger events, or it waits for a timer to go off. A trigger is a one-byte message. Depending on the message received, the queue manager performs one of the following actions (the message is followed by the symbolic constant used internally by the software):

### **D (QMGR\_REQ\_SCAN\_DEFERRED)**

Start a deferred queue scan. If a deferred queue scan is already in progress, that scan will be restarted as soon as it finishes.

### **I (QMGR\_REQ\_SCAN\_INCOMING)**

Start an incoming queue scan. If an incoming queue scan is already in progress, that scan will be restarted as soon as it finishes.

### **A (QMGR\_REQ\_SCAN\_ALL)**

Ignore deferred queue file time stamps. The request affects the next deferred queue scan.

### **F (QMGR\_REQ\_FLUSH\_DEAD)**

Purge all information about dead transports and destinations.

### **W (TRIGGER\_REQ\_WAKEUP)**

Wakeup call. This is used by the master server to instantiate servers that should not go away forever. The action is to start an incoming queue scan.

The **oqmgr(8)** daemon reads an entire buffer worth of triggers. Multiple identical trigger requests are collapsed into one, and trigger requests are sorted so that **A** and **F** precede **D** and **I**. Thus, in order to force a deferred queue run, one would request **A F D**; in order to notify the queue manager of the arrival of new mail one would request **I**.

## **STANDARDS**

RFC 3463 (Enhanced status codes)

RFC 3464 (Delivery status notifications)

## **SECURITY**

The **oqmgr(8)** daemon is not security sensitive. It reads single-character messages from untrusted local users, and thus may be susceptible to denial of service attacks. The **oqmgr(8)** daemon does not talk to the outside world, and it can be run at fixed low privilege in a chrooted environment.

## **DIAGNOSTICS**

Problems and transactions are logged to the **syslog(8)** daemon. Corrupted message files are saved to the **corrupt** queue for further inspection.

Depending on the setting of the **notify\_classes** parameter, the postmaster is notified of bounces and of other trouble.

## **BUGS**

A single queue manager process has to compete for disk access with multiple front-end processes such as **cleanup(8)**. A sudden burst of inbound mail can negatively impact outbound delivery rates.

## **CONFIGURATION PARAMETERS**

Changes to **main.cf** are not picked up automatically, as **oqmgr(8)** is a persistent process. Use the command "**postfix reload**" after a configuration change.

The text below provides only a parameter summary. See **postconf(5)** for more details including examples.

In the text below, *transport* is the first field in a **master.cf** entry.

## COMPATIBILITY CONTROLS

Available before Postfix version 2.5:

### **allow\_min\_user (no)**

Allow a sender or recipient address to have ‘-’ as the first character.

Available with Postfix version 2.7 and later:

### **default\_filter\_nexthop (empty)**

When a content\_filter or FILTER request specifies no explicit next-hop destination, use \$default\_filter\_nexthop instead; when that value is empty, use the domain in the recipient address.

## ACTIVE QUEUE CONTROLS

### **qmgr\_clog\_warn\_time (300s)**

The minimal delay between warnings that a specific destination is clogging up the Postfix active queue.

### **qmgr\_message\_active\_limit (20000)**

The maximal number of messages in the active queue.

### **qmgr\_message\_recipient\_limit (20000)**

The maximal number of recipients held in memory by the Postfix queue manager, and the maximal size of the short-term, in-memory "dead" destination status cache.

## DELIVERY CONCURRENCY CONTROLS

### **qmgr\_fudge\_factor (100)**

Obsolete feature: the percentage of delivery resources that a busy mail system will use up for delivery of a large mailing list message.

### **initial\_destination\_concurrency (5)**

The initial per-destination concurrency level for parallel delivery to the same destination.

### **default\_destination\_concurrency\_limit (20)**

The default maximal number of parallel deliveries to the same destination.

### **transport\_destination\_concurrency\_limit (\$default\_destination\_concurrency\_limit)**

Idem, for delivery via the named message *transport*.

Available in Postfix version 2.5 and later:

### **transport\_initial\_destination\_concurrency (\$initial\_destination\_concurrency)**

Initial concurrency for delivery via the named message *transport*.

### **default\_destination\_concurrency\_failed\_cohort\_limit (1)**

How many pseudo-cohorts must suffer connection or handshake failure before a specific destination is considered unavailable (and further delivery is suspended).

### **transport\_destination\_concurrency\_failed\_cohort\_limit (\$default\_destination\_concurrency\_failed\_cohort\_limit)**

Idem, for delivery via the named message *transport*.

### **default\_destination\_concurrency\_negative\_feedback (1)**

The per-destination amount of delivery concurrency negative feedback, after a delivery completes with a connection or handshake failure.

### **transport\_destination\_concurrency\_negative\_feedback (\$default\_destination\_concurrency\_negative\_feedback)**

Idem, for delivery via the named message *transport*.

**default\_destination\_concurrency\_positive\_feedback (1)**

The per-destination amount of delivery concurrency positive feedback, after a delivery completes without connection or handshake failure.

**transport\_destination\_concurrency\_positive\_feedback (\$default\_destination\_concurrency\_positive\_feedback)**

Idem, for delivery via the named message *transport*.

**destination\_concurrency\_feedback\_debug (no)**

Make the queue manager's feedback algorithm verbose for performance analysis purposes.

**RECIPIENT SCHEDULING CONTROLS****default\_destination\_recipient\_limit (50)**

The default maximal number of recipients per message delivery.

**transport\_destination\_recipient\_limit**

Idem, for delivery via the named message *transport*.

**OTHER RESOURCE AND RATE CONTROLS****minimal\_backoff\_time (300s)**

The minimal time between attempts to deliver a deferred message; prior to Postfix 2.4 the default value was 1000s.

**maximal\_backoff\_time (4000s)**

The maximal time between attempts to deliver a deferred message.

**maximal\_queue\_lifetime (5d)**

Consider a message as undeliverable, when delivery fails with a temporary error, and the time in the queue has reached the maximal\_queue\_lifetime limit.

**queue\_run\_delay (300s)**

The time between deferred queue scans by the queue manager; prior to Postfix 2.4 the default value was 1000s.

**transport\_retry\_time (60s)**

The time between attempts by the Postfix queue manager to contact a malfunctioning message delivery transport.

Available in Postfix version 2.1 and later:

**bounce\_queue\_lifetime (5d)**

Consider a bounce message as undeliverable, when delivery fails with a temporary error, and the time in the queue has reached the bounce\_queue\_lifetime limit.

Available in Postfix version 2.5 and later:

**default\_destination\_rate\_delay (0s)**

The default amount of delay that is inserted between individual deliveries to the same destination; the resulting behavior depends on the value of the corresponding per-destination recipient limit.

**transport\_destination\_rate\_delay \$default\_destination\_rate\_delay**

Idem, for delivery via the named message *transport*.

**SAFETY CONTROLS****qmgr\_daemon\_timeout (1000s)**

How much time a Postfix queue manager process may take to handle a request before it is terminated by a built-in watchdog timer.

**qmgr\_ipc\_timeout (60s)**

The time limit for the queue manager to send or receive information over an internal communication channel.

**MISCELLANEOUS CONTROLS**

**config\_directory (see 'postconf -d' output)**

The default location of the Postfix main.cf and master.cf configuration files.

**defer\_transports (empty)**

The names of message delivery transports that should not deliver mail unless someone issues "sendmail -q" or equivalent.

**delay\_logging\_resolution\_limit (2)**

The maximal number of digits after the decimal point when logging sub-second delay values.

**helpful\_warnings (yes)**

Log warnings about problematic configuration settings, and provide helpful suggestions.

**process\_id (read-only)**

The process ID of a Postfix command or daemon process.

**process\_name (read-only)**

The process name of a Postfix command or daemon process.

**queue\_directory (see 'postconf -d' output)**

The location of the Postfix top-level queue directory.

**syslog\_facility (mail)**

The syslog facility of Postfix logging.

**syslog\_name (see 'postconf -d' output)**

The mail system name that is prepended to the process name in syslog records, so that "smtpd" becomes, for example, "postfix/smtpd".

Available in Postfix version 3.0 and later:

**confirm\_delay\_cleared (no)**

After sending a "your message is delayed" notification, inform the sender when the delay clears up.

**FILES**

/var/spool/postfix/incoming, incoming queue  
/var/spool/postfix/active, active queue  
/var/spool/postfix/deferred, deferred queue  
/var/spool/postfix/bounce, non-delivery status  
/var/spool/postfix/defer, non-delivery status  
/var/spool/postfix/trace, delivery status

**SEE ALSO**

trivial-rewrite(8), address routing  
bounce(8), delivery status reports  
postconf(5), configuration parameters  
master(5), generic daemon options  
master(8), process manager  
syslogd(8), system logging

**README FILES**

Use "postconf readme\_directory" or "postconf html\_directory" to locate this information.  
QSHAPE\_README, Postfix queue analysis

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