

**NAME**

qpopper -- POP3 server (v4.1)

**SYNOPSIS**

```
/usr/local/libexec/qpopper [ [ address ] [ : ] [ port ] ]
[ -b bulldir ] [ -c ] [ -d ] [ -D drac-host ]
[ -e login_delay=nn,expire=nn ] [ -f config-file ]
[ -k ] [ -K service ] [ -l0/1/2 ] [ -p0/1/2/3/4 ]
[ -R ] [ -s ] [ -S ] [ -t trace-file ] [ -T timeout ]
[ -u ] [ -U ] [ -v ] [ -V ] [ -x ] [ -y log-facility ]
```

**NOTE**

This man page may be out of date. Please see the *Administrator's Guide* included in the distribution or on the Qpopper web site at [www.qpopper.org/documentation.html](http://www.qpopper.org/documentation.html)

**DESCRIPTION**

*Qpopper* is a POP3 server to enable POP3 clients to read and download mail. This server implements the POP protocol defined in RFC 1939 and the RFC 2449 extensions. This implementation runs on a variety of Unix platforms, including Linux.

The server also enables clients to send mail using XTND XMIT, which is processed via *sendmail*(8).

**OPTIONS**

*[address][:][port]*

If compiled as a standalone daemon (instead of being run from *inetd*), you can specify the IP *address* and/or *port* number to bind to at run-time as parameter 1, e.g., 'popper 199.46.50.7:8110 -S' or 'popper 8110 -S -T600'. If IPv6 support is compiled in, *address* can be also IPv6 address by enclosing the address with '[' and ']'. If not specified, the IP *address* defaults to all available. The default *port* is 110 except when `_DEBUG` (not simply `DEBUG`) is defined, then it is 8765.

See the Administrator's Guide file for more information on standalone mode.

**-b bulldir**

Turns on the bulletin feature and specifies the *bulletin directory* path. The command line overrides the compiled value if it is defined. To enable bulletins by default and specify a default bulletin directory during compilation, include the `--enable-bulletins=bull-directory` flag when running `./configure`. The usual bulletin directory is `/var/spool/bulls`.

A bulletin database can be used to track the bulletins instead of the users' home directory. This feature is enabled by including the `--enable-bulldb=bull-directory` flag when running `./configure`.

- c Downcases user names. This permits users to configure their clients with user names in UPPER or MiXeD case, and still login, assuming their actual user name is all lower case.
- d Turns on debug logging if compiled (pass `--enable-debugging` to `./configure`). All debugging information is saved using `syslog(8)`. If this option is used, it should be first, so that debug records are generated for subsequent options.

**-D** *drac-host*

If compiled with `--enable-drac`, specifies the *drac host*. Defaults to `localhost`.

**-e** *x=value,...*

Sets POP3 extensions. Sets *x* to the specified *value*. Used to include Login Delay and/or Expire response tags to the CAPA command.

Remember neither Expire nor Login Delay is enforced by qpopper; Sysadmins have to implement them by some other means. However, you can enforce EXPIRE 0 (no retention at all) by using the `--enable-auto-delete` flag with `./configure`. This causes messages to be automatically deleted after they are downloaded.

**-f** *config-file*

Reads additional run-time options from *config-file*. See *Config-File Options* for option names and syntax.

- k Enables Kerberos authentication when qpopper has been compiled with **--with-kerberos5**. You must already have libraries that support Kerberos.

**-K** *service*

The specified Kerberos *service* is used instead of the compiled-in value. The default is **rcmd**, but **pop** is also common.

**-l** 0|1|2

Sets TLS/SSL handling. Must have compiled with OpenSSL or SSL Plus.

0 is the default. TLS/SSL is not supported.

1 enables the STLS command. This permits a client to attempt TLS/SSL negotiation after connecting.

**2** Causes Qpopper to attempt TLS negotiation when a client first connects. This is for alternate-port support.

**-p 0|1|2|3|4**

Sets plain-text password handling options. To use this option, you must have an alternative to plain-text passwords available, such as APOP.

**0** is the default, which permits plain-text passwords only for those users who are not in the APOP database.

**1** disables plain-text passwords for all users, even those who are not in the APOP database.

**2** permits plain-text passwords for all users, even those who are in the APOP database (this allows clients to fall back on plain-text authentication if they do not support APOP).

**3** allows plain-text passwords only for connections on the loop-back (127.\*.\*) address.

**4** permits plain-text passwords only if TLS/SSL has been negotiated for the session (requires an executable compiled with OpenSSL or SSL Plus).

**-R** Disables reverse lookups on client IP addresses.

**-t** *trace-file*

Turns on debug logging if compiled (pass `--enable-debugging` to `./configure`) and writes the trace information in *trace-file* using `fprintf(3V)`. If this option is used, it should be first, so that debug records are generated for subsequent options.

**-s** Turns on statistics logging using `syslog(8)` or *trace-file*. At the end of each popper session, the following information is logged: username, number of messages deleted, number of bytes deleted, number of message left on server, number of bytes left on server.

**-S** Enables server mode. This mode reduces disk I/O and disk space usage when popper is used on a system that serves POP only users exclusively.

**-T** *timeout*

option changes the default compiled value `POP_TIMEOUT` for terminating a session with a pop client.

When the server is waiting for a command to arrive from the client, it times out after the specified

number of seconds and terminates the session. This avoids having popper processes hang forever waiting for command input from clients which have terminated abnormally or are hung.

A small value is ok for small to medium networks where the network delay is within a few seconds. In this case 15-30 seconds is not unreasonable. Networks with large delays in sending packets (e.g., SLIP links) may require a larger value. In this case 300 seconds (5 minutes) is not unreasonable.

Note that RFC 1939 requires a minimum of 600 second (10 minutes).

- u After a user authenticates, process options from a file called .qpopper-options in the user's home directory. This file can be owned by and writable by the user.
- U After a user authenticates, process options from a file called .<user>.qpopper-options in the spool directory, where <user> is the user name. This file should not be owned by nor writable by the user.
- v Report the current version and exit.
- V Report the current version and exit.
- x Disable use of XTND XMIT. NOTE: Administrators are strongly encouraged to disable XTND XMIT in favor of mechanisms such as SMTP AUTH.
- y **log-facility**

**Processing Options** are described below.

### Processing Options

Here are some options the values of which are announced to clients. Syntax of the options is:

*opt=value,...*

This sets option *opt* to be *value*. Multiple options can be specified at one instance and are comma separated.

The following are the options supported:

**login\_delay**  
**expire**

## Config-File Options

You can set Qpopper run-time options either from the command line or in a configuration file.

Configuration files use different option names and a different syntax than the command-line (because command-line options are limited to one character).

The general syntax of the config file (in ABNF) is:

config-line ::= comment-line / reset-line / set-line

comment-line ::= "#" <comment-text to end of line>

reset-line ::= "reset" boolean-option

set-line ::= implicit-set / explicit-set

explicit-set ::= "set" option "=" value

implicit-set ::= "set" boolean-option

option ::= boolean-option / integer-option /  
string-option / mnemonic-option

value ::= "true" / "false" / integer / name

string ::= "<" 1\*255 CHAR ">"

CHAR ::= <any printable character except space or tab>

In other words the line starts with **set** or **reset**, then an option name, and either ends there or has an = followed by a value.

A comment line starts with **#**. The rest of the line is ignored. You can also use **#** to end any line. Everything else on the line is a comment.

Note that **reset** can only be used with boolean options. The = and the value are omitted when **reset** is used. When **set** is used with a boolean option, you can omit the = and *value* if you wish (it defaults to **true**), or you can use any of the four values **true**, **false**, **1**, or **0**.

Some options are "restricted", meaning that they can't be used in a .qpopper-options file in a user's

home directory and/or in a <user>.qpopper-options file in the spool directory.

The following are the command line options you can use:

**announce-login-delay**

Type: Integer

Equivalent switch: "-e login\_delay=xx"

Restricted: no

**announce-expire**

Type: Integer

Equivalent switch: "-e expire=xxx"

Restricted: no

**bulldir**

Type: Name

Equivalent switch: "-b bulldir"

Restricted: no

**bulldb-nonfatal**

Type: Boolean

Equivalent switch: "-B"

Restricted: no

Only valid if compiled with --enable-bulldb.

**clear-text-password**

Type: Mnemonic

Equivalent switch: "-p0|1|2|3|4"

Values:

**default**

Permits clear-text passwords for any user not in the APOP database.

**never**

Clear-text passwords are never permitted. Users not in the APOP database are unable to use Qpopper.

**always**

Clear-text passwords are always permitted, even for users in the APOP database.

**local**

Clear-text passwords are permitted only when the client connects through the local interface (127.\*.\*.\*).

**tls** Clear-text passwords are permitted when TLS/SSL has been negotiated for the session. Available only if compiled with OpenSSL or SSL Plus.

**ssl** (Same as tls).

Restricted: not valid in a configuration file in the user's home directory nor in the spool directory.

**config-file**

Type: Name

Equivalent switch: "-f config-file"

Restricted: no

**debug**

Type: Boolean

Equivalent switch: "-d debug"

Restricted: no

Only valid if compiled with --enable-debug.

**downcase-user**

Type: Boolean

Equivalent switch: "-c"

Restricted: not valid in a configuration file in the user's home directory nor in the spool directory.

**drac-host**

Type: Name

Equivalent switch: "-D drac-host"

Restricted: no

Only valid if compiled with --enable-drac

**kerberos**

Type: Boolean

Equivalent switch: "-k"

Restricted: not valid in a configuration file in the user's home directory nor in the spool directory.

Only valid if compiled with --enable-kerberos5 or -DKERBEROS

**kerberos-service**

Type: Name

Equivalent switch: "-K service-name"

Restricted: not valid in a configuration file in the user's home directory nor in the spool directory.

Only valid if compiled with --enable-kerberos5 or -DKERBEROS

**mail-lock-check**

Type: Integer

Equivalent switch: "-L msgs"

Restricted: no

**reverse-lookup**

Type: Boolean

Equivalent switch: "-R" (Sense reversed!)

Restricted: not valid in a configuration file in the user's home directory nor in the spool directory.

Sense reversed from command-line switch. Using **-R** is the same as 'SET REVERSE-LOOKUP = FALSE'.

**server-mode**

Type: Boolean

Equivalent switch: "-S"

Restricted: no

**statistics**

Type: Boolean

Equivalent switch: "-s"

Restricted: no

**timeout**

Type: Integer

Equivalent switch: "-T timeout"

Restricted: no

**tls-support**

Type: Mnemonic

Equivalent switch: "-l"

Values:



**default**

TLS/SSL not supported.

**none**

(same as default).

**stls** Enables support for the STLS command.

**alternate-port**

Enables alternate-port TLS/SSL.

Restricted: not valid in a configuration file in the user's home directory nor in the spool directory.

Only valid if compiled with OpenSSL or SSL Plus.

**tracefile**

Type: Name

Equivalent switch: "-t logfile"

Restricted: no

Only valid if compiled with --enable-debug.

**spool-options**

Type: Integer

Equivalent switch: "-U"

Restricted: not valid in a configuration file in the user's home directory nor in the spool directory.

**user-options**

Type: Integer

Equivalent switch: "-u"

Restricted: not valid in a configuration file in the user's home directory nor in the spool directory.

**xtnd-xmit**

Type: Boolean

Equivalent switch: "-x"

Restricted: not valid in a configuration file in the user's home directory nor in the spool directory.

**BULLETINS**

The bulletin feature gives system administrators a way to send important announcements to all POP users without having to do mass mailings.

The bulletin directory contains one file per bulletin. Each file contains a single mail message with a header and body in normal mailbox format. The first line of each such bulletin must be a "From " line. The easiest way for sysadmins to create such bulletins is to mail themselves a copy of the bulletin using the account to which they want replies to be sent, then use their mail program to save the message to a file in the bulletin directory in mailbox format. The bulletin directory must be world readable.

The name of each bulletin file begins with the bulletin number, and may optionally continue with any other characters. E.g., the file name of bulletin number 23 might be "23.pophost\_down\_sunday".

Popper creates a file named `.popbull` in the home directory of each user. This file contains a single line recording the highest numbered bulletin received by the user.

Each time a POP client connects to the server, any new bulletins which the user has not received previously are automatically appended to the user's mail.

When a bulletin is copied, the "To" header line is replaced by "To: username@thishost", and any "Status:" header lines are deleted. Otherwise, the bulletin is copied as is.

When a new user checks for mail the first time, popper creates the `.popbull` file in the user's home directory and seeds it with the current maximum bulletin number. Thus new users do not get old bulletins.

Bulletins can be enabled by default, and the bulletin directory specified, by including the `--enable-bulletins=bull-directory` flag when running `./configure`.

To use a database instead of `.popbull` files in users' home directories for tracking the highest bulletin seen by a user, include the `--enable-bulldb=bull-directory` flag when running `./configure`. You must also create two empty files in the bulletin directory, called `bulldb.pag` and `bulldb.dir`. When a bulletin database is used, qpopper checks for and uses any `.popbull` files in the user's home directory, to provide continuity.

To specify the maximum number of bulletins sent to new users, include the `--with-new-bulls` flag when running `./configure`. For example, `--with-new-bulls=10` says that new users get at most ten bulletins.

## THE POP TRANSACTION CYCLE

The Qpopper server is a single program (called popper) that is launched by `inetd` when it gets a service request on the POP TCP port. (The official port number specified in RFC 1939 for POP version 3 is port 110. However, some POP3 clients attempt to contact the server at port 109, the POP version 2 port. Unless you are running both POP2 and POP3 servers, you can simply define both ports for use by

the POP3 server. This is explained in the installation instructions later on.)

The qpopper program initializes and verifies that the peer IP address is registered in the local domain (unless the **-R** command-line option is used), logging a warning message when a connection is made with a client whose IP address does not have a canonical name. For systems using BSD 4.3 bind, it also checks to see if a canonical name lookup for the client returns the same peer IP address, logging a warning message if it does not.

The server enters the authorization state, during which the client must correctly identify itself by providing a valid Unix userid and password on the server's host machine (or successfully authenticate using *APOP* or *AUTH*). No other exchanges are allowed during this state (other than a request to quit.) If authentication fails, a warning message is logged and the session ends.

Once the user is identified, qpopper changes its user and group ids to match that of the user and enters the transaction state. The server makes a temporary copy of the user's maildrop which is used for all subsequent transactions (unless running in *server mode* ). These include the bulk of POP commands to retrieve mail, delete mail, undelete mail, and so forth.

When the client quits, the server enters the final update state, during which the network connection is terminated and the user's maildrop is updated with the (possibly) modified temporary maildrop.

## LOGGING

The POP server uses *syslog* to keep a record of its activities. On systems with BSD 4.3 syslogging, the server logs (by default) to the "local0" facility at priority "notice" for all messages except debugging which is logged at priority "debug". The default log file is */var/log/messages*. These can be changed, if desired. On systems with 4.2 syslogging all messages are logged to the local log file, usually */usr/spool/mqueue/syslog*.

## DEBUGGING

Qpopper logs debugging information when the **-d** parameter is specified after its invocation in the *inetd.conf* file. Care should be exercised in using this option since it generates considerable output in the *syslog* file. Alternatively, the **"-t <file-name>"** option places debugging information into file "*<file-name>*" using *fprintf* instead of *syslog*.

For SunOS version 3.5, the popper program is launched by *inetd* from */etc/servers*. This file does not allow you to specify command line arguments. Therefore, if you want to enable debugging, you can specify a shell script in */etc/servers* to be launched instead of popper and in this script call popper with the desired arguments.

You can confirm that the POP server is running on Unix by telneting to port 110 (or 109 if you set it up that way). For example:

```
%telnet pop.qualcomm.com 110
Trying...
Connected to pop.qualcomm.com.
Escape character is '^]'.
+OK QPOP (version 3.0) at pop.qualcomm.com starting.
quit
+OK Pop server at pop.qualcomm.com signing off.
Connection closed by foreign host.
```

## EXTENSIONS

The server implements several extended commands.

**XTND XMIT:** Sends a mail message using `/usr/sbin/sendmail`.

**XTND XLIST header [num]:** Extracts and returns the specified header line for the specified message number. If the "num" parameter is missing, returns the header line for all the messages which are not currently marked for deletion.

**XMANGLE:** Can be used as a modifier to the TOP, RETR, LIST commands. The result is to condense MIME messages into a single part. For example:

```
RETR 10 XMANGLE(text=html;headers=to:,cc:,from:,date:)
results in transforming message 10 into a single part of content-type text/html with only those headers
which were requested.
```

Qpopper also supports the "-no-mime" user name hack. As a way to enable MIME-mangling with clients that do not support XMANGLE, add "-no-mime" to the user name. For example, if the userid is "mary", enter it in the client as "mary-no-mime".

## FILES

<code>/var/mail</code>	mail files
<code>/etc/ftpusers</code>	list of unwelcome/restricted users
<code>/etc/inetd.conf</code>	pop program invocation
<code>/etc/syslog.conf</code>	logging specifications
<code>/var/spool/bulls</code>	bulletins

~/.popbull      largest bulletin number seen by user

**SEE ALSO**

inetd(8), inetd.conf(4), sendmail(8)

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