qmail Recipient Validation

Numbers in cyan circles correspond to function names in generator.c and to current_step values in spamdyke's filter.c.

Numbers in orange circles correspond to function names in generator.c and to current_step values in spamdyke-qrv's validate-qrv.c.

Relevant man pages:
qmail-control, qmail-users, qmail-send, qmail-smtpd, qmail-inject, addresses, envelopes, dot-qmail

Relevant files:
/var/qmail/doc/INSTALL.alias

START

1 Is the environment variable RELAYCLIENT set?
YES → Append contents of RELAYCLIENT to the end of the recipient address
Example:
RELAYCLIENT=foobar
ADDRESS=fred@bedrock.com
RESULT=fred@bedrock.comfoobar

2 Does the recipient address have a domain name?
YES → 2 Does the recipient address have a domain name?
NO → spamdyke will reject the message → qmail allows recipients without domains

3 Does the file /var/qmail/control/envnoathost exist?
NO → 4 Does the file /var/qmail/control/me exist?
NO → Reject the message; qmail-smtpd will not start without /var/qmail/control/me
YES → Rewrite the recipient address: use the contents of /var/qmail/control/envnoathost as the domain name

4 Does the file /var/qmail/control/me exist?
YES → Rewrite the recipient address: use the contents of /var/qmail/control/me as the domain name

5 Is the recipient address domain name listed in /var/qmail/control/rcpthosts?
NO → 6 Is the recipient address domain name listed in the CDB file /var/qmail/control/morercpthosts.cdb?
NO → Reject the message: relaying not allowed
YES

7 Does the recipient address username contain a percent sign?
YES → 8 Is the recipient address domain name listed in /var/qmail/control/percenthack?
YES → Rewrite the recipient address: discard the domain name, replace the last percent sign in the username with an @ symbol
Example:
ADDRESS=fred%inner.com%office.com@bedrock.com
RESULT=fred%inner.com@office.com

8 Is the recipient address domain name listed in /var/qmail/control/percenthack?
NO

9 Is the recipient address domain name listed in /var/qmail/control/locals?
NO → 10 Is the recipient address domain name listed in /var/qmail/control/virtualdomains before a colon?
NO → Accept the message for remote delivery (relaying)
YES → 11 Does the text after the colon exactly match the domain name? (This is relevant to vpopmail later)
YES
NO → Parse the matching line at the colon as DOMAIN.PREPEND. Prepend the PREPEND value and a hyphen to the recipient address.
Example:
ADDRESS=fred@bedrock.com
LINE=example.com:foobar
RESULT=foobar-fred@bedrock.com

12 Does the CDB file /var/qmail/users/cdb contain an exact match for the recipient username?
/var/qmail/users/cdb is created from /var/qmail/users/assign as described in the qmail-users man page
NO → 13 Does the CDB file /var/qmail/users/cdb contain a wildcard matching the beginning of the recipient username?
NO → Establish a temporary username using the recipient address username as its initial value
YES → 14 Is the matching wildcard exactly equal to the domain name followed by a hyphen? (This is relevant to vpopmail later)
YES
Example:
ADDRESS USERNAME=bedrock.com-FRED.3-BARNEY-WILMA
ASSIGN=`=bedrock.com-:bedrockuser:100:101:/home/bedrock:XXX:YYY`
HOMEDIR=/home/bedrock
DASH=XXX
EXT=yyyfred:3-barney-wilma
FILENAME=.qmailXXXyyyfred:3-barney-wilma
Find the closest match. Load "homedir" from field 5 and "dash" from field 6. Load "ext" from field 7 and convert to lowercase. Compute a value by removing the text in field 1 from the beginning of the recipient username, converting to lowercase and replacing all dots with colons. Append the value to "ext". Construct a filename by concatenating ".qmail", the "dash" field and the "ext" field. Evaluate all future file accesses using the UID from field 3 and the GID from field 4.
NO → Find the closest match. Load "homedir" from field 5 and "dash" from field 6. Load "ext" from field 7 and convert to lowercase. Compute a value by removing the text in field 1 from the beginning of the recipient username, converting to lowercase and replacing all dots with colons. Append the value to "ext". Construct a filename by concatenating ".qmail", the "dash" field and the "ext" field. Evaluate all future file accesses using the UID from field 3 and the GID from field 4.

30 Is the temporary username longer than 31 characters?
YES → Truncate the temporary username at 32 characters (yes, 32 not 31)
NO → 31 Does a system user exist whose username matches the temporary username, home directory exists and home directory is owned by the user?
YES → Load "homedir". If the system username is equal to the entire recipient address username (no truncation occurred), set the "dash" field to an empty string. Otherwise set the "dash" field to "-". Compute the "ext" field value by removing the temporary username from the beginning of the recipient username, converting to lowercase and replacing all dots with colons. Construct a filename by concatenating ".qmail", the "dash" field and the "ext" field. Evaluate all future file accesses using the system user ID and the user's primary group ID.
Example:
USERNAME=fred-BARNEY%1.3-wilma
TEMP USERNAME=fred
DASH=-
EXT=barney%1:3-wilma
FILENAME=.qmail-barney%1:3-wilma
NO → 32 Does the temporary username contain a hyphen?
YES → Truncate the temporary username at the last hyphen
Example:
USERNAME=fred-one-two
RESULT=fred-one
NO → 33 Does a system user exist named "alias"?
NO → qmail will queue the message until the alias user is created (and eventually bounce it) spamdyke will reject the message
YES → Load "homedir" from the system user's home directory, set "dash" to "-". Compute "ext" by converting the recipient username to lowercase and replacing all dots with colons. Construct a filename by concatenating ".qmail", the "dash" field and the "ext" field. Evaluate all future file accesses using the system user ID and the system's primary group ID.
Example:
RECIPIENT USERNAME=fred-BARNEY.wilma
PASSWD ENTRY=`alias:*:100:100:Alias User:/home/alias:/bin/false`
HOMEDIR=/home/alias
DASH=-
EXT=fred-barney:wilma
FILENAME=.qmail-fred-barney:wilma

Load "homedir" from field 5, "dash" from field 6 and "ext" from field 7. Convert "ext" to lowercase and replace all dots with colons. Construct a filename by concatenating ".qmail", the "dash" field and the "ext" field. Evaluate all future file accesses using the UID from field 3 and the GID from field 4.
Example:
ADDRESS=fred@bedrock.com
DASH=FOO
EXT=BAR.QUX
RESULT=.qmailFOObar.qux

15 Does the home directory exist as a regular directory?
NO → qmail will queue the message until the home directory becomes a regular directory (and eventually bounce it) spamdyke will reject the message
YES → 16 Is the home directory readable?
NO → qmail will bounce the message spamdyke will reject the message
YES → 17 Is the home directory world-writable?
YES → qmail will queue the message until the home directory is not world-writable (and eventually bounce it) spamdyke will reject the message
NO → 18 Is the home directory sticky?
YES → qmail will queue the message until the home directory is not sticky (and eventually bounce it) spamdyke will reject the message
NO → 19 Does the constructed filename exist in the home directory?
YES
NO → Construct a filename by concatenating ".qmail", the "dash" field and "default"
Example:
ADDRESS=fred@bedrock.com
DASH=FOO
EXT=BAR
RESULT=.qmailFOOdefault
20 Does the constructed filename exist in the home directory?
NO → 21 Is the "dash" field empty?
NO → qmail will bounce the message spamdyke will reject the message
YES

22 Does the home directory exist as a regular directory?
NO → qmail will queue the message until the home directory becomes a regular directory (and eventually bounce it) spamdyke will reject the message
YES → 23 Is the home directory readable?
NO → qmail will bounce the message spamdyke will reject the message
YES → 24 Is the home directory world-writable?
YES → qmail will queue the message until the home directory is not world-writable (and eventually bounce it) spamdyke will reject the message
NO → 25 Is the home directory sticky?
YES → qmail will queue the message until the home directory is not sticky (and eventually bounce it) spamdyke will reject the message
NO → 26 Does the constructed filename exist in the home directory?
NO → 27 Does the "ext" field contain a hyphen?
NO → 28 Is the "ext" field empty?
YES → 29 Is the "dash" field empty?
NO → Reject the message: invalid recipient
YES → Prepend the original value of "ext" (prior to step 26) to the recipient username.
NO
YES → Truncate the "ext" field at the last hyphen. Construct a filename by concatenating ".qmail", the "dash" field and "ext" field. Evaluate all future file accesses using the system user ID and the user's primary group ID.
Example:
DASH=XXX
EXT=yyyfred:3-barney-wilma
FILENAME=.qmailXXXyyyfred:3-barney-wilma
NEW EXT=yyyfred:3-barney
NEW FILENAME=.qmailXXXyyyfred:3-barney-default
NO → Empty the "ext" field. Construct a filename by concatenating ".qmail", the "dash" field and "default".
Example:
DASH=XXX
EXT=yyyfred:3
FILENAME=.qmailXXXyyyfred:3-default
NEW EXT=
NEW FILENAME=.qmailXXXdefault

34 Is the located file readable?
NO → qmail will queue the message until the file is readable (and eventually bounce it) spamdyke will reject the message
YES → 35 Is the located file world-writable?
YES → qmail will queue the message until the file is not world-writable (and eventually bounce it) spamdyke will reject the message
NO → 36 Is the located file empty?
YES → Use the default delivery option supplied to qmail-start and qmail-local, typically stored in /var/qmail/control/defaultdelivery. Treat it like a file with one line. The default delivery option cannot be a comment.
NO → 37 Is the located file owner-executable?
YES → Do not honor programs, mboxes or Maildirs in the file
NO → 38 Is the first line of the file blank?
YES → qmail will queue the message until the first line is not blank (and eventually bounce it) spamdyke will reject the message
NO → 39 More lines in the file?
NO → qmail will discard the message if only comments are found or bounce it if an invalid forward address is found spamdyke will reject the message
YES → 40 Is the line blank, or does it start with a pound sign ("#")?
YES → Ignore the line (comment)
NO → 41 Does the line begin with a slash or a dot and end in a non-slash? (mbox)
YES → qmail will queue the message until mbox deliveries are allowed (and eventually bounce it) and will not continue processing the file spamdyke will reject the message
NO → 42 Are mbox deliveries allowed? (step 37)
YES → 43 Does the named file exist and is it writeable?
YES → Accept the message
NO → qmail will queue the message until the file becomes writable (and eventually bounce it) and will not continue processing the file spamdyke will reject the message
NO → 44 Does the line begin with a slash or a dot and end with a slash? (maildir)
YES → 45 Are Maildir deliveries allowed? (step 37)
NO → qmail will queue the message until Maildir deliveries are allowed (and eventually bounce it) and will not continue processing the file spamdyke will reject the message
YES → 46 Does the named Maildir exist and is it writeable?
YES → Accept the message
NO → qmail will queue the message until the Maildir becomes writable (and eventually bounce it) and will not continue processing the file spamdyke will reject the message
NO → 47 Does the line start with a pipe character ("|") (program)
YES → 48 Are program deliveries allowed? (step 37)
YES → 49 Does the named program exist and is it executable?
YES → 50 Is the program vdelivermail with two parameters?
YES → 51 Does the CDB file /var/qmail/users/cdb contain a wildcard match for the recipient domain followed only by a hyphen and does the username contain no percent signs? (Was step 7 NO **and** were steps 11 and 14 YES?)
YES → 52 Was spamdyke-qrv compiled with vpopmail support?
YES → 53 Does the recipient address have any valias destinations?
YES → 54 More valias destinations?
YES → 55 Is the valias destination identical to the original recipient address?
YES → 56 Is the valias destination's domain name listed in /var/qmail/control/locals?
YES → 57 Is the valias destination a valid address?
YES → Recursively use this procedure to determine an address' validity; be careful not to get stuck in a loop
NO → Accept the message
NO → Accept the message
NO → qmail will bounce the message and will not continue processing the file spamdyke will reject the message
NO → 58 Is the recipient address found by vuserinfo?
YES → Accept the message
NO → 59 Is the last parameter to vdelivermail "bounce-no-mailbox"?
YES → qmail will bounce the message and will not continue processing the file spamdyke will reject the message
NO → 60 Is the last parameter to vdelivermail "delete"?
YES → Accept the message
NO → 61 Does the last parameter to vdelivermail start with a slash?
YES → Use the last parameter as a new recipient address
NO → 62 Is the new recipient address identical to the original recipient address?
YES → qmail will bounce the message and will not continue processing the file spamdyke will reject the message
NO → 63 Is the new recipient address domain name listed in /var/qmail/control/locals?
NO → Accept the message
YES → 64 Is the new recipient address valid?
YES → Accept the message
NO → Recursively use this procedure to determine an address' validity; be careful not to get stuck in a loop
vdelivermail does not check for delivery loops here; it allows qmail to loop the message and stops if it sees its own headers
Use the last parameter as a home folder, append "/Maildir" and treat it as a Maildir destination
65 Does the named Maildir exist and is it writeable?
YES → Accept the message
NO → qmail will bounce the message and will not continue processing the file spamdyke will reject the message

vdelivermail will only return errors; qmail will queue the message (and eventually bounce it) and will not continue processing the file spamdyke will reject the message
NO → Does the CDB file /var/qmail/users/cdb contain a wildcard match for the recipient domain followed only by a hyphen and does the username contain no percent signs? (Was step 7 NO **and** were steps 11 and 14 YES?)
vpopmail does not process the assign CDB correctly; exact matches and other wildcard formats are perfectly legal for qmail but are not found by vdelivermail.
NO → spamdyke will accept the message qmail will continue processing