NAME
      pipe − Postfix delivery to external command

SYNOPSIS
      pipe [generic Postfix daemon options] command_attributes...

DESCRIPTION
      The **pipe(8)** daemon processes requests from the Postfix queue manager to deliver messages to external
      commands. This program expects to be run from the **master(8)** process manager.

      Message attributes such as sender address, recipient address and next−hop host name can be specified as
      command−line macros that are expanded before the external command is executed.

      The **pipe(8)** daemon updates queue files and marks recipients as finished, or it informs the queue manager
      that delivery should be tried again at a later time. Delivery status reports are sent to the **bounce(8)**, **defer(8)**
      or **trace(8)** daemon as appropriate.

SINGLE-RECIPIENT DELIVERY
      Some destinations cannot handle more than one recipient per delivery request. Examples are pagers or fax
      machines. In addition, multi−recipient delivery is undesirable when prepending a **Delivered−to:** or
      X−Original−To: message header.

      To prevent Postfix from sending multiple recipients per delivery request, specify

      *transport*_**destination_recipient_limit = 1**

      in the Postfix **main.cf** file, where *transport* is the name in the first column of the Postfix **master.cf** entry for
      the pipe−based delivery transport.

COMMAND ATTRIBUTE SYNTAX
      The external command attributes are given in the **master.cf** file at the end of a service definition. The syn-
      tax is as follows:

      chroot=*pathname* (optional)
            Change the process root directory and working directory to the named directory. This happens be-
            fore switching to the privileges specified with the **user** attribute, and before executing the optional
            directory=*pathname* directive. Delivery is deferred in case of failure.

            This feature is available as of Postfix 2.3.

      directory=*pathname* (optional)
            Change to the named directory before executing the external command. The directory must be ac-
            cessible for the user specified with the **user** attribute (see below). The default working directory is
            $queue_directory. Delivery is deferred in case of failure.

            This feature is available as of Postfix 2.2.

      eol=*string* (optional, default: **\n**)
            The output record delimiter. Typically one would use either **\r\n** or **\n**. The usual C−style back-
            slash escape sequences are recognized: **\a \b \f \n \r \t \v** *ddd* (up to three octal digits) and ****.

      flags=BDFORXhqu.> (optional)
            Optional message processing flags. By default, a message is copied unchanged.

            B   Append a blank line at the end of each message. This is required by some mail user
                    agents that recognize "**From** " lines only when preceded by a blank line.

            D   Prepend a "**Delivered−To:** *recipient*" message header with the envelope recipient address.
                    Note: for this to work, the *transport*_**destination_recipient_limit** must be 1 (see SIN-
                    GLE−RECIPIENT DELIVERY above for details).

                    The **D** flag also enforces loop detection (Postfix 2.5 and later): if a message already con-
                    tains a **Delivered−To:** header with the same recipient address, then the message is re-
                    turned as undeliverable. The address comparison is case insensitive.

                                                                                                                      1

This feature is available as of Postfix 2.0.

F   Prepend a "**From** *sender time_stamp*" envelope header to the message content. This is expected by, for example, **UUCP** software.

O   Prepend an "**X−Original−To:** *recipient*" message header with the recipient address as given to Postfix. Note: for this to work, the *transport_**destination_recipient_limit*** must be 1 (see SINGLE−RECIPIENT DELIVERY above for details).

This feature is available as of Postfix 2.0.

R   Prepend a **Return−Path:** message header with the envelope sender address.

X   Indicate that the external command performs final delivery. This flag affects the status reported in "success" DSN (delivery status notification) messages, and changes it from "relayed" into "delivered".

This feature is available as of Postfix 2.5.

h   Fold the command−line **$original_recipient** and **$recipient** address domain part (text to the right of the right−most @ character) to lower case; fold the entire command−line **$domain** and **$nexthop** host or domain information to lower case. This is recommended for delivery via **UUCP**.

q   Quote white space and other special characters in the command−line **$sender**, **$original_recipient** and **$recipient** address localparts (text to the left of the right−most @ character), according to an 8−bit transparent version of RFC 822. This is recommended for delivery via **UUCP** or **BSMTP**.

The result is compatible with the address parsing of command−line recipients by the Postfix [sendmail(1)](#) mail submission command.

The **q** flag affects only entire addresses, not the partial address information from the **$user**, **$extension** or **$mailbox** command−line macros.

u   Fold the command−line **$original_recipient** and **$recipient** address localpart (text to the left of the right−most @ character) to lower case. This is recommended for delivery via **UUCP**.

.   Prepend "**.**" to lines starting with "**.**". This is needed by, for example, **BSMTP** software.

>   Prepend "**>**" to lines starting with "**From** ". This is expected by, for example, **UUCP** software.

null_sender=*replacement* (default: MAILER−DAEMON)
Replace the null sender address (typically used for delivery status notifications) with the specified text when expanding the **$sender** command−line macro, and when generating a From_ or Return−Path: message header.

If the null sender replacement text is a non−empty string then it is affected by the **q** flag for address quoting in command−line arguments.

The null sender replacement text may be empty; this form is recommended for content filters that feed mail back into Postfix. The empty sender address is not affected by the **q** flag for address quoting in command−line arguments.

Caution: a null sender address is easily mis−parsed by naive software. For example, when the [pipe(8)](#) daemon executes a command such as:

Wrong: command −f$sender −− $recipient

the command will mis−parse the −f option value when the sender address is a null string. For correct parsing, specify **$sender** as an argument by itself:

Right: command −f $sender −− $recipient

This feature is available as of Postfix 2.3.

size=*size_limit* (optional)
>   Don't deliver messages that exceed this size limit (in bytes); return them to the sender instead.

user=*username* (required)

user=*username*:*groupname*
>   Execute the external command with the user ID and group ID of the specified *username*. The software refuses to execute commands with root privileges, or with the privileges of the mail system owner. If *groupname* is specified, the corresponding group ID is used instead of the group ID of *username*.

argv=*command*... (required)
>   The command to be executed. This must be specified as the last command attribute. The command is executed directly, i.e. without interpretation of shell meta characters by a shell command interpreter.
>
>   Specify "{" and "}" around command arguments that contain whitespace (Postfix 3.0 and later). Whitespace after the opening "{" and before the closing "}" is ignored.
>
>   In the command argument vector, the following macros are recognized and replaced with corresponding information from the Postfix queue manager delivery request.
>
>   In addition to the form ${*name*}, the forms $*name* and the deprecated form $(*name*) are also recognized. Specify **$$** where a single **$** is wanted.
>
>   **${client_address}**
>   >   This macro expands to the remote client network address.
>   >
>   >   This feature is available as of Postfix 2.2.
>
>   **${client_helo}**
>   >   This macro expands to the remote client HELO command parameter.
>   >
>   >   This feature is available as of Postfix 2.2.
>
>   **${client_hostname}**
>   >   This macro expands to the remote client hostname.
>   >
>   >   This feature is available as of Postfix 2.2.
>
>   **${client_port}**
>   >   This macro expands to the remote client TCP port number.
>   >
>   >   This feature is available as of Postfix 2.5.
>
>   **${client_protocol}**
>   >   This macro expands to the remote client protocol.
>   >
>   >   This feature is available as of Postfix 2.2.
>
>   **${domain}**
>   >   This macro expands to the domain portion of the recipient address. For example, with an address *user+foo@domain* the domain is *domain*.
>   >
>   >   This information is modified by the **h** flag for case folding.
>   >
>   >   This feature is available as of Postfix 2.5.
>
>   **${extension}**
>   >   This macro expands to the extension part of a recipient address. For example, with an address *user+foo@domain* the extension is *foo*.
>   >
>   >   A command−line argument that contains **${extension}** expands into as many command−line arguments as there are recipients.

This information is modified by the **u** flag for case folding.

${mailbox}

This macro expands to the complete local part of a recipient address. For example, with an address *user+foo@domain* the mailbox is *user+foo*.

A command−line argument that contains **${mailbox}** expands to as many command−line arguments as there are recipients.

This information is modified by the **u** flag for case folding.

${nexthop}

This macro expands to the next−hop hostname.

This information is modified by the **h** flag for case folding.

${original_recipient}

This macro expands to the complete recipient address before any address rewriting or aliasing.

A command−line argument that contains **${original_recipient}** expands to as many command−line arguments as there are recipients.

This information is modified by the **hqu** flags for quoting and case folding.

This feature is available as of Postfix 2.5.

${queue_id}

This macro expands to the queue id.

This feature is available as of Postfix 2.11.

${recipient}

This macro expands to the complete recipient address.

A command−line argument that contains **${recipient}** expands to as many command−line arguments as there are recipients.

This information is modified by the **hqu** flags for quoting and case folding.

${sasl_method}

This macro expands to the name of the SASL authentication mechanism in the AUTH command when the Postfix SMTP server received the message.

This feature is available as of Postfix 2.2.

${sasl_sender}

This macro expands to the SASL sender name (i.e. the original submitter as per RFC 4954) in the MAIL FROM command when the Postfix SMTP server received the message.

This feature is available as of Postfix 2.2.

${sasl_username}

This macro expands to the SASL user name in the AUTH command when the Postfix SMTP server received the message.

This feature is available as of Postfix 2.2.

${sender}

This macro expands to the envelope sender address. By default, the null sender address expands to MAILER−DAEMON; this can be changed with the **null_sender** attribute, as described above.

This information is modified by the **q** flag for quoting.

${size} This macro expands to Postfix's idea of the message size, which is an approximation of the size of the message as delivered.

${user}

This macro expands to the username part of a recipient address. For example, with an address *user+foo@domain* the username part is *user*.

A command−line argument that contains **${user}** expands into as many command−line arguments as there are recipients.

This information is modified by the **u** flag for case folding.

STANDARDS
RFC 3463 (Enhanced status codes)

DIAGNOSTICS
Command exit status codes are expected to follow the conventions defined in **<sysexits.h>**. Exit status 0 means normal successful completion.

In the case of a non−zero exit status, a limited amount of command output is logged, and reported in a delivery status notification. When the output begins with a 4.X.X or 5.X.X enhanced status code, the status code takes precedence over the non−zero exit status (Postfix version 2.3 and later).

After successful delivery (zero exit status) a limited amount of command output is logged, and reported in "success" delivery status notifications (Postfix 3.0 and later). This command output is not examined for the presence of an enhanced status code.

Problems and transactions are logged to **syslogd(8)** or **postlogd(8)**. Corrupted message files are marked so that the queue manager can move them to the **corrupt** queue for further inspection.

SECURITY
This program needs a dual personality 1) to access the private Postfix queue and IPC mechanisms, and 2) to execute external commands as the specified user. It is therefore security sensitive.

CONFIGURATION PARAMETERS
Changes to **main.cf** are picked up automatically as **pipe(8)** processes run for only a limited amount of time. Use the command "**postfix reload**" to speed up a change.

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

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

transport_time_limit ($command_time_limit)

A transport−specific override for the command_time_limit parameter value, where *transport* is the master.cf name of the message delivery transport.

Implemented in the qmgr(8) daemon:

transport_destination_concurrency_limit ($default_destination_concurrency_limit)

A transport−specific override for the default_destination_concurrency_limit parameter value, where *transport* is the master.cf name of the message delivery transport.

transport_destination_recipient_limit ($default_destination_recipient_limit)

A transport−specific override for the default_destination_recipient_limit parameter value, where *transport* is the master.cf name of the message delivery transport.

MISCELLANEOUS CONTROLS
config_directory (see 'postconf -d' output)

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

daemon_timeout (18000s)

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

delay_logging_resolution_limit (2)
> The maximal number of digits after the decimal point when logging sub−second delay values.

export_environment (see 'postconf -d' output)
> The list of environment variables that a Postfix process will export to non−Postfix processes.

ipc_timeout (3600s)
> The time limit for sending or receiving information over an internal communication channel.

mail_owner (postfix)
> The UNIX system account that owns the Postfix queue and most Postfix daemon processes.

max_idle (100s)
> The maximum amount of time that an idle Postfix daemon process waits for an incoming connection before terminating voluntarily.

max_use (100)
> The maximal number of incoming connections that a Postfix daemon process will service before terminating voluntarily.

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.

recipient_delimiter (empty)
> The set of characters that can separate a user name from its extension (example: user+foo), or a .forward file name from its extension (example: .forward+foo).

syslog_facility (mail)
> The syslog facility of Postfix logging.

syslog_name (see 'postconf -d' output)
> A prefix that is prepended to the process name in syslog records, so that, for example, "smtpd" becomes "prefix/smtpd".

Available in Postfix version 3.0 and later:

pipe_delivery_status_filter ($default_delivery_status_filter)
> Optional filter for the **pipe(8)** delivery agent to change the delivery status code or explanatory text of successful or unsuccessful deliveries.

Available in Postfix version 3.3 and later:

enable_original_recipient (yes)
> Enable support for the original recipient address after an address is rewritten to a different address (for example with aliasing or with canonical mapping).

service_name (read−only)
> The master.cf service name of a Postfix daemon process.

SEE ALSO
qmgr(8),
queue manager
bounce(8),
delivery status reports
postconf(5),
configuration parameters
master(5),
generic daemon options
master(8),

process manager
postlogd(8),
Postfix logging
syslogd(8), system logging

LICENSE

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