

**NAME**

header\_checks – Postfix built-in content inspection

**SYNOPSIS**

```
header_checks = pcre:/etc/postfix/header_checks
mime_header_checks = pcre:/etc/postfix/mime_header_checks
nested_header_checks = pcre:/etc/postfix/nested_header_checks
body_checks = pcre:/etc/postfix/body_checks
```

```
postmap -q "string" pcre:/etc/postfix/filename
postmap -q - pcre:/etc/postfix/filename <inputfile
```

**DESCRIPTION**

This document describes access control on the content of message headers and message body lines; it is implemented by the Postfix **cleanup**(8) server before mail is queued. See **access**(5) for access control on remote SMTP client information.

Each message header or message body line is compared against a list of patterns. When a match is found the corresponding action is executed, and the matching process is repeated for the next message header or message body line.

For examples, see the EXAMPLES section at the end of this manual page.

Postfix header or body\_checks are designed to stop a flood of mail from worms or viruses; they do not decode attachments, and they do not unzip archives. See the documents referenced below in the README FILES section if you need more sophisticated content analysis.

Postfix supports four built-in content inspection classes:

**header\_checks**

These are applied to initial message headers (except for the headers that are processed with **mime\_header\_checks**).

**mime\_header\_checks** (default: **\$header\_checks**)

These are applied to MIME related message headers only.

This feature is available in Postfix 2.0 and later.

**nested\_header\_checks** (default: **\$header\_checks**)

These are applied to message headers of attached email messages (except for the headers that are processed with **mime\_header\_checks**).

This feature is available in Postfix 2.0 and later.

**body\_checks**

These are applied to all other content, including multi-part message boundaries.

With Postfix versions before 2.0, all content after the initial message headers is treated as body content.

Note: message headers are examined one logical header at a time, even when a message header spans multiple lines. Body lines are always examined one line at a time.

**COMPATIBILITY**

With Postfix version 2.2 and earlier specify "**postmap -fq**" to query a table that contains case sensitive patterns. By default, regexp: and pcre: patterns are case insensitive.

**TABLE FORMAT**

This document assumes that header and body\_checks rules are specified in the form of Postfix regular expression lookup tables. Usually the best performance is obtained with **pcre** (Perl Compatible Regular

Expression) tables, but the slower **regexp** (POSIX regular expressions) support is more widely available. Use the command "**postconf -m**" to find out what lookup table types your Postfix system supports.

The general format of Postfix regular expression tables is given below. For a discussion of specific pattern or flags syntax, see **pcre\_table(5)** or **regexp\_table(5)**, respectively.

*/pattern/flags action*

When */pattern/* matches the input string, execute the corresponding *action*. See below for a list of possible actions.

*!/pattern/flags action*

When */pattern/* does **not** match the input string, execute the corresponding *action*.

**if** */pattern/flags*

**endif** Match the input string against the patterns between **if** and **endif**, if and only if the same input string also matches */pattern/*. The **if..endif** can nest.

Note: do not prepend whitespace to patterns inside **if..endif**.

**if** *!/pattern/flags*

**endif** Match the input string against the patterns between **if** and **endif**, if and only if the same input string does **not** match */pattern/*. The **if..endif** can nest.

blank lines and comments

Empty lines and whitespace-only lines are ignored, as are lines whose first non-whitespace character is a '#'.

multi-line text

A pattern/action line starts with non-whitespace text. A line that starts with whitespace continues a logical line.

## TABLE SEARCH ORDER

For each line of message input, the patterns are applied in the order as specified in the table. When a pattern is found that matches the input line, the corresponding action is executed and then the next input line is inspected.

## TEXT SUBSTITUTION

Substitution of substrings from the matched expression into the *action* string is possible using the conventional Perl syntax (**\$1**, **\$2**, etc.). The macros in the result string may need to be written as **\${n}** or **\$(n)** if they aren't followed by whitespace.

Note: since negated patterns (those preceded by **!**) return a result when the expression does not match, substitutions are not available for negated patterns.

## ACTIONS

Action names are case insensitive. They are shown in upper case for consistency with other Postfix documentation.

**DISCARD** *optional text...*

Claim successful delivery and silently discard the message. Log the optional text if specified, otherwise log a generic message.

Note: this action disables further header or body\_checks inspection of the current message and affects all recipients. To discard only one recipient without discarding the entire message, use the transport(5) table to direct mail to the discard(8) service.

This feature is available in Postfix 2.0 and later.

**DUNNO**

Pretend that the input line did not match any pattern, and inspect the next input line. This action can be used to shorten the table search.

For backwards compatibility reasons, Postfix also accepts **OK** but it is (and always has been) treated as **DUNNO**.

This feature is available in Postfix 2.1 and later.

**FILTER** *transport:destination*

Write a content filter request to the queue file, and inspect the next input line. After the complete message is received it will be sent through the specified external content filter. More information about external content filters is in the Postfix **FILTER\_README** file.

Note: this action overrides the **content\_filter** setting, and affects all recipients of the message. In the case that multiple **FILTER** actions fire, only the last one is executed.

This feature is available in Postfix 2.0 and later.

**HOLD** *optional text...*

Arrange for the message to be placed on the **hold** queue, and inspect the next input line. The message remains on **hold** until someone either deletes it or releases it for delivery. Log the optional text if specified, otherwise log a generic message.

Mail that is placed on hold can be examined with the **postcat**(1) command, and can be destroyed or released with the **postsuper**(1) command.

Note: use "**postsuper -r**" to release mail that was kept on hold for a significant fraction of **\$maximal\_queue\_lifetime** or **\$bounce\_queue\_lifetime**, or longer. Use "**postsuper -H**" only for mail that will not expire within a few delivery attempts.

Note: this action affects all recipients of the message.

This feature is available in Postfix 2.0 and later.

**IGNORE**

Delete the current line from the input, and inspect the next input line.

**PREPEND** *text...*

Prepend one line with the specified text, and inspect the next input line.

Notes:

- The prepended text is output on a separate line, immediately before the input that triggered the **PREPEND** action.
- The prepended text is not considered part of the input stream: it is not subject to header/body checks or address rewriting, and it does not affect the way that Postfix adds missing message headers.
- When prepending text before a message header line, the prepended text must begin with a valid message header label.
- This action cannot be used to prepend multi-line text.

This feature is available in Postfix 2.1 and later.

**REDIRECT** *user@domain*

Write a message redirection request to the queue file, and inspect the next input line. After the message is queued, it will be sent to the specified address instead of the intended recipient(s).

Note: this action overrides the **FILTER** action, and affects all recipients of the message. If multiple **REDIRECT** actions fire, only the last one is executed.

This feature is available in Postfix 2.1 and later.

#### **REPLACE** *text...*

Replace the current line with the specified text, and inspect the next input line.

This feature is available in Postfix 2.2 and later. The description below applies to Postfix 2.2.2 and later.

Notes:

- When replacing a message header line, the replacement text must begin with a valid header label.
- The replaced text remains part of the input stream. Unlike the result from the **PREPEND** action, a replaced message header may be subject to address rewriting and may affect the way that Postfix adds missing message headers.

#### **REJECT** *optional text...*

Reject the entire message. Reply with *optional text...* when the optional text is specified, otherwise reply with a generic error message.

Note: this action disables further header or body\_checks inspection of the current message and affects all recipients.

Postfix version 2.3 and later support enhanced status codes. When no code is specified at the beginning of *optional text...*, Postfix inserts a default enhanced status code of "5.7.1".

#### **WARN** *optional text...*

Log a warning with the *optional text...* (or log a generic message), and inspect the next input line. This action is useful for debugging and for testing a pattern before applying more drastic actions.

## **BUGS**

Empty lines never match, because some map types mis-behave when given a zero-length search string. This limitation may be removed for regular expression tables in a future release.

Many people overlook the main limitations of header and body\_checks rules.

- These rules operate on one logical message header or one body line at a time. A decision made for one line is not carried over to the next line.
- If text in the message body is encoded (RFC 2045) then the rules need to be specified for the encoded form.
- Likewise, when message headers are encoded (RFC 2047) then the rules need to be specified for the encoded form.

Message headers added by the **cleanup**(8) daemon itself are excluded from inspection. Examples of such message headers are **From:**, **To:**, **Message-ID:**, **Date:**.

Message headers deleted by the **cleanup**(8) daemon will be examined before they are deleted. Examples are: **Bcc:**, **Content-Length:**, **Return-Path:**.

## **CONFIGURATION PARAMETERS**

### **body\_checks**

Lookup tables with content filter rules for message body lines. These filters see one physical line at a time, in chunks of at most **\$line\_length\_limit** bytes.

**body\_checks\_size\_limit**

The amount of content per message body segment (attachment) that is subjected to **\$body\_checks** filtering.

**header\_checks**

**mime\_header\_checks** (default: **\$header\_checks**)

**nested\_header\_checks** (default: **\$header\_checks**)

Lookup tables with content filter rules for message header lines: respectively, these are applied to the initial message headers (not including MIME headers), to the MIME headers anywhere in the message, and to the initial headers of attached messages.

Note: these filters see one logical message header at a time, even when a message header spans multiple lines. Message headers that are longer than **\$header\_size\_limit** characters are truncated.

**disable\_mime\_input\_processing**

While receiving mail, give no special treatment to MIME related message headers; all text after the initial message headers is considered to be part of the message body. This means that **header\_checks** is applied to all the initial message headers, and that **body\_checks** is applied to the remainder of the message.

Note: when used in this manner, **body\_checks** will process a multi-line message header one line at a time.

**EXAMPLES**

Header pattern to block attachments with bad file name extensions. For convenience, the PCRE /x flag is specified, so that there is no need to collapse the pattern into a single line of text. The purpose of the `[[[:xdigit:]]` sub-expressions is to recognize Windows CLSID strings.

```
/etc/postfix/main.cf:
    header_checks = pcre:/etc/postfix/header_checks.pcre

/etc/postfix/header_checks.pcre:
/^Content-(Disposition|Type).*name\s*=\s*"?(.*\.|=2E)(
ade|adp|asp|bas|bat|chm|cmd|com|cpl|crt|dll|exe|
hlp|ht[at]|
inf|ins|isp|jse?|lnk|md|betw|ms[cipt]|nws|
\[[:xdigit:]]{8}(?:-[:xdigit:]]{4}){3}-[:xdigit:]]{12}\|
ops|pcd|pif|prf|reg|sc|frt|sh|bsm|swf|
vb[esx]?|vxd|ws[cfh])(\?=)"?\s*(;|$/x
REJECT Attachment name "$2" may not end with ".$4"
```

Body pattern to stop a specific HTML browser vulnerability exploit.

```
/etc/postfix/main.cf:
    body_checks = regexp:/etc/postfix/body_checks

/etc/postfix/body_checks:
/^<iframe src=(3D)?cid:.* height=(3D)?0 width=(3D)?0>$/
REJECT IFRAME vulnerability exploit
```

**SEE ALSO**

cleanup(8), canonicalize and enqueue Postfix message  
pcre\_table(5), format of PCRE lookup tables  
regexp\_table(5), format of POSIX regular expression tables  
postconf(1), Postfix configuration utility  
postmap(1), Postfix lookup table management

postsuper(1), Postfix janitor  
postcat(1), show Postfix queue file contents  
RFC 2045, base64 and quoted-printable encoding rules  
RFC 2047, message header encoding for non-ASCII text

## **README FILES**

Use "**postconf readme\_directory**" or "**postconf html\_directory**" to locate this information.  
DATABASE\_README, Postfix lookup table overview  
CONTENT\_INSPECTION\_README, Postfix content inspection overview  
BUILTIN\_FILTER\_README, Postfix built-in content inspection  
BACKSCATTER\_README, blocking returned forged mail

## **LICENSE**

The Secure Mailer license must be distributed with this software.

## **AUTHOR(S)**

Wietse Venema  
IBM T.J. Watson Research  
P.O. Box 704  
Yorktown Heights, NY 10598, USA