

SpamSieve 1.3.1 Manual

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1 Introduction

1.1 What Is SpamSieve?

SpamSieve is an application that integrates with e-mail clients to filter out unsolicited mass mailings, commonly known as “spam.” Previously, most people just ignored spam messages or created simple rules in their e-mail clients to filter them out. In recent years and months, the spam problem has gotten worse. Today’s spam is harder to detect, and there is more of it. People have turned to a wide variety of software solutions to help regain control over their inboxes. This software differs primarily along two dimensions: how it identifies spam messages; and how it reduces their burden on the user.

1.2 Identifying Spam

Simple rules that you create in your e-mail client generally look for common spam words. If a message’s subject contains “fix your credit” or its body contains “free porn” it’s probably spam. You can look at the spam you receive and recognize some patterns. Unfortunately, spam is constantly evolving, so you will have to keep working on your rules. Eventually you get to the point where you don’t know what else to add, afraid that adding more words or phrases to your “blacklist” would start filtering out legitimate mail. You can somewhat get around this by creating a “whitelist” that accepts every message from the people you regularly correspond with. However, this doesn’t help for messages received from new people, and it’s not uncommon for spam messages to contain a forged return address of someone at your own company.

Commercial anti-spam software often combines rules with the notion of a *score*. Rules can look for patterns that make a message more or less likely to be spam. Each rule either increases or decreases the message’s spam score. If the score is above a certain threshold, the message is considered to be spam. The flexible nature of the score means that this approach is often an improvement over simple rules. However, the user typically has little or no control over how the spam score is calculated. If a spam message gets through, the user has no recourse but to hope that the next update corrects the problem. Another problem is that spammers can buy this software, too. They can tailor their spam to get through the rules.

SpamSieve uses a statistical technique known as *Bayesian analysis*. For a more in-depth treatment of this technique applied spam, see this [article by Paul Graham](http://www.paulgraham.com/spam.html)¹ and the papers it references. Bayesian analysis combines the good properties of the above two approaches and adds some of its own. First, you *train* SpamSieve with examples of your good mail and your spam. When you receive a new message, SpamSieve looks at how often its words occur in spam messages vs. good messages. Lots of spammy words mean that the message is probably spam. However, the presence of words that are common in your normal e-mail but rare in spam messages can tip the scale the other way. This “fuzzy” approach allows SpamSieve to catch nearly every spam message yet produce very few false positives. (A *false*

¹<http://www.paulgraham.com/spam.html>

positive is a good message mistakenly identified as spam. Most users consider false positives to be much worse than *false negatives*—spam messages that the user has to see.)

Because you train SpamSieve with your own mail, you have full control. If SpamSieve makes a mistake, you can train it with the message in question so that in the future it will do better. Further, since spammers don't have access to the messages you trained SpamSieve with, they have no way of knowing how to change their messages to get through. Whereas other spam filters become less effective as spammers figure out their rules, *SpamSieve becomes more effective over time* because it has a larger corpus of your messages to work from.

1.3 Filtering It Out

Anti-spam software that runs on mail servers often filters out spam before you ever see it. This means that unless the filter is perfect, either some spam messages will get through or a few legitimate messages will not. In the first case, you may want additional, client-side, anti-spam software. The second case troubles many people so much that they prefer that the server do no filtering at all.

Other client-side anti-spam software connects to your mail server to delete spam messages before your e-mail client can download them. This works similarly to above, except that to catch all the spam messages you have to run the program right before your regular e-mail program checks for mail. This is difficult to time properly if you check your mail often, and even so you may download some messages that weren't filtered and also download good messages twice. The anti-spam software may let you see the messages that it filtered out, so that you can verify that there were no false positives. However, you have to do this using its interface, not your e-mail program's (which is typically nicer). And if there was a false positive you then have to transfer it into your e-mail program so that you can file and reply to it.

E-mail clients like Entourage have their own spam filters built-in. This is convenient and makes it easy to manually scan for false positives, but there is typically little you can do when the filter makes mistakes.

The best solution is user-configurable anti-spam software that works directly with your e-mail client. Apple has added exactly this to its Mail.app program in Mac OS X 10.2. By most accounts this works great...unless you prefer a client other than Mail.app. This is where SpamSieve comes in. It brings powerful spam filtering to other popular e-mail clients. SpamSieve works with any number of mail accounts and supports whatever account types (POP, IMAP, Hotmail, AOL) are supported by your e-mail client.

2 Requirements

SpamSieve has been developed and tested on Mac OS X 10.1.5 and 10.2.6. It is designed to work with the following e-mail clients:

- [Emailer 2.0v3²](#), previously available from Claris

²<http://www.fogcity.com>

- [Entourage 9.0.1](#)³ and later from Microsoft
- [Eudora 5.2](#)⁴ and later from Qualcomm
- [Mailsmith 1.5](#)⁵ and later (2.0 recommended) from Bare Bones Software
- [PowerMail 4.0](#)⁶ and later from CTM Development

3 Installation and Updating

3.1 Updating From a Previous Version of SpamSieve

SpamSieve 1.3.1 will automatically read the corpus and statistics from previous versions. You can simply replace the old application file with the new one.

This version of SpamSieve contains updated AppleScripts for improved integration with e-mail client software. If you want to take advantage of these improvements (listed in Section 12), you will need to replace your existing scripts with the new ones. You may need to reconfigure the mail rules/filters in your e-mail client so that they reference the new scripts. If you have modified the existing scripts, be sure to transfer the modifications to the new scripts.

3.2 The SpamSieve Application

Double-click the **SpamSieve-1.3.1.dmg** file to mount or expand the SpamSieve disk image. Then move the SpamSieve application to your **Applications** folder. There's no need to copy this manual to your hard disk. A copy of it is built into SpamSieve, and you can access it by choosing **SpamSieve Manual (PDF)** from the **Help** menu.

Find the folder that pertains to your e-mail client (e.g. **For Entourage Users**). The AppleScripts in this folder allow you to interact with SpamSieve from within your e-mail client. The screenshots in the following sections show where to install the scripts. Follow the instructions below that correspond to your e-mail client.

3.3 Mailer Integration Scripts

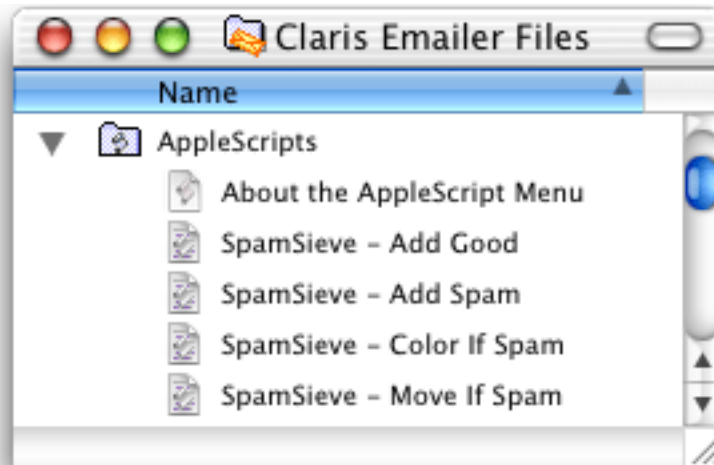
Make sure that you have installed the AppleScripts as shown here:

³<http://www.microsoft.com/mac/entouragex/default.asp?navindex=s4>

⁴<http://www.eudora.com/mac>

⁵<http://www.barebones.com/products/mailsmith.html>

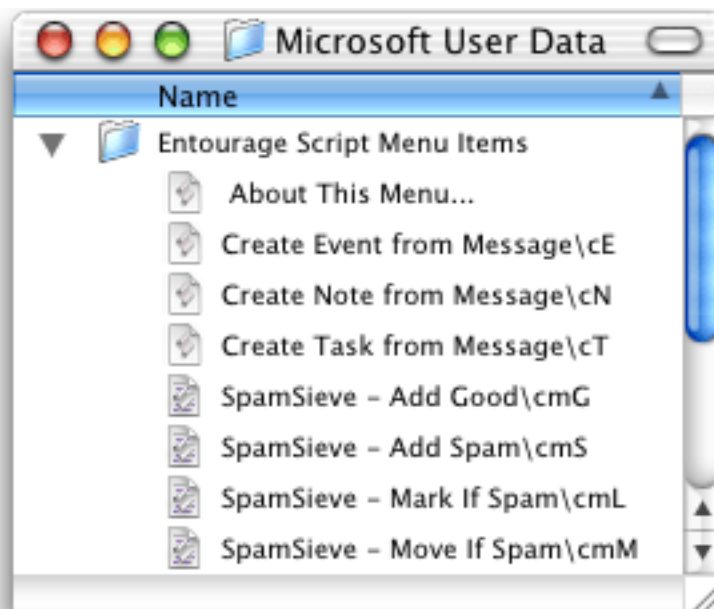
⁶<http://www.ctmdev.com/powermail4.shtml>



You may need to quit and re-launch EMailer in order for it to notice that you have installed the SpamSieve AppleScripts.

3.4 Entourage Integration Scripts

Disable Entourage's Junk Mail Filter, and make sure that the Mailing List Manager will not interfere with the messages you want SpamSieve to examine. Then make sure that you have installed the AppleScripts as shown here:



You may need to quit and re-launch Entourage in order for it to notice that you have installed the SpamSieve AppleScripts.

3.5 Eudora Integration Applet

Make sure that you have copied the **SpamSieve Eudora Helper** file to the **Applications** folder of your hard disk. You will need to launch this applet any time you want to use SpamSieve from Eudora. If you want, you can use System Preferences to make it a login item. Do not launch the copy on the disk image, as that will cause Eudora to try to find it in the wrong place.

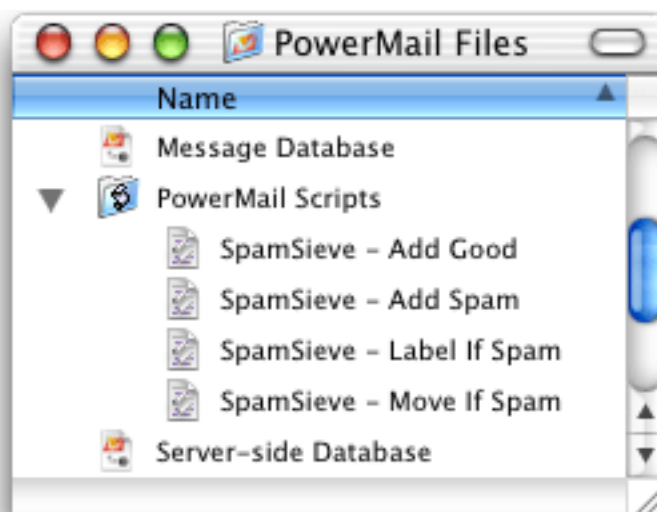
You can copy the **Uninstall Eudora Helper** file to your hard disk, or just leave it on the disk image. Run this applet if you no longer want to use SpamSieve with Eudora.

3.6 Mailsmith Direct Integration

Mailsmith 2.0 and later feature direct integration with SpamSieve. This is more convenient and easier to use than the script- and filter-based integration that was necessary when using previous versions of Mailsmith (see Appendix A). You can now enable SpamSieve simply by clicking the checkbox in the **Spam Handling** pane of Mailsmith's preferences. For more information about using SpamSieve with Mailsmith, please see Chapter 8 of the Mailsmith User Manual.

3.7 PowerMail Integration Scripts

Make sure that you have installed the AppleScripts as shown here:



The **PowerMail Files** folder is probably located in your **Documents** folder.

4 Training SpamSieve to Recognize Your Spam

Before you can use SpamSieve, you must give it some examples of messages you consider to be spam, and ones which you do not. You do this by selecting some messages and then

telling SpamSieve to add them to its corpus. For the details of how to do this, see Section 5. For now, what’s important is that you will train SpamSieve with both good messages and spam messages.

In general, the more messages you train SpamSieve with, the better its accuracy will be. For best results, you should train it with *at least* 600 messages. Training SpamSieve with more of one type of message will bias its predictions to that type. For instance, a corpus with mostly good messages will make SpamSieve very conservative about identifying spam, leading to more false negatives. Most users find that filling the corpus with two to four times as many spam messages as good ones (as shown at the bottom of the **Statistics** window) produces a low level of false negatives, while keeping false positives rare or non-existent. For this reason, you should *not* add all your good messages to the corpus when you first install SpamSieve, because you likely do not have enough saved spam messages to compensate.

If SpamSieve marks a good message as spam, you should add the message to SpamSieve as a good message. This lets SpamSieve know that it made a mistake, and also adds the message to the corpus to improve future accuracy. Likewise, if SpamSieve marks a spam message as good, you should add the message to SpamSieve as a spam message. *If you do not correct SpamSieve when it makes mistakes, accuracy will deteriorate over time.*

Entourage users: make sure that you correct SpamSieve’s mistakes by running the AppleScripts in your Scripts menu—do not click the underlined blue text in Entourage to indicate that a message is not spam.

If you make a mistake and tell SpamSieve that a message is spam when it is actually good (or vice-versa), simply correct yourself as you would correct SpamSieve. That is, if the message is good, add the message as good; if it is spam, add it as spam. SpamSieve will “undo” the previous, incorrect, addition to the corpus.

To improve SpamSieve’s accuracy, it is important to train it with new messages as you receive them. When they first install SpamSieve, most users have many good messages to train it with, but few spams. For this reason, SpamSieve is set to automatically add new spam messages to its corpus as you receive them. It does not automatically add new good messages, on the assumption that you have already trained it with plenty of good mail. Both of these settings may be modified in the preferences. As a result, after training SpamSieve for the first time, you only need to add messages to its corpus to correct mistakes.

It is a good idea to save or export your spam messages; do not delete them. The next major release of SpamSieve will be able to import your 1.3.1 corpus, but accuracy will be better if you retrain it from the actual spam messages you received.

5 Using SpamSieve With Your E-Mail Client

5.1 General Filtering Advice

Most of the e-mail clients that SpamSieve supports let you control the order in which the rules (a.k.a. filters or mail actions) that you have created process mail. How you order the SpamSieve rule is up to you. If you get a lot of spam that matches the rules you use to organize your mail, you might want to run the SpamSieve rule first. This will allow it to find spam among all your messages. If you’d rather deal with spam manually than have any

false positives, then you might want to run the SpamSieve rule last, after all your other rules have been given a chance to match and file away messages from known senders. Be sure to check the SpamSieve preferences for additional filtering options.

5.2 EMailer

5.2.1 Basic Usage

- To add spam messages to SpamSieve, select one or more of them and run the **SpamSieve - Add Spam** script from the **Scripts** menu.
- To add good messages to SpamSieve, select one or more of them and run the **SpamSieve - Add Good** script from the **Scripts** menu.
- SpamSieve will mark or move new spam messages that you receive, depending on how you configure EMailer below.
- To manually ask SpamSieve to color or move messages that it thinks are spam, select them and run the **SpamSieve - Color If Spam** or the **SpamSieve - Move If Spam** script from the **Scripts** menu.

5.2.2 Coloring Predicted Spam Messages

If you want SpamSieve to color messages that it thinks are spam, set up a mail action in EMailer that looks like this:



5.2.3 Moving Predicted Spam Messages

If, instead, you want SpamSieve to move suspected spam messages to a **Spam** folder, set up a mail action in EMailer that looks like this:



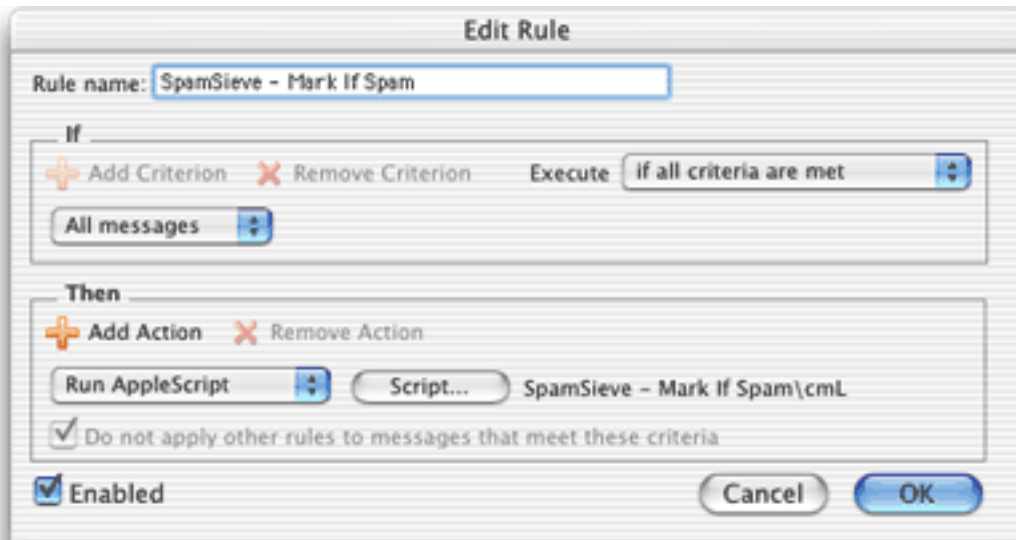
5.3 Entourage

5.3.1 Basic Usage

- To add spam messages to SpamSieve, select one or more of them and run the **SpamSieve - Add Spam** script from the **Scripts** menu.
- To add good messages to SpamSieve, select one or more of them and run the **SpamSieve - Add Good** script from the **Scripts** menu.
- SpamSieve will mark or move new spam messages that you receive, depending on how you configure Entourage below.
- To manually ask SpamSieve to mark or move messages that it thinks are spam, select them and run the **SpamSieve - Mark If Spam** or the **SpamSieve - Move If Spam** script from the **Scripts** menu.

5.3.2 Marking Predicted Spam Messages

If you want SpamSieve to color messages that it thinks are spam, set up a mail rule in Entourage that looks like this:

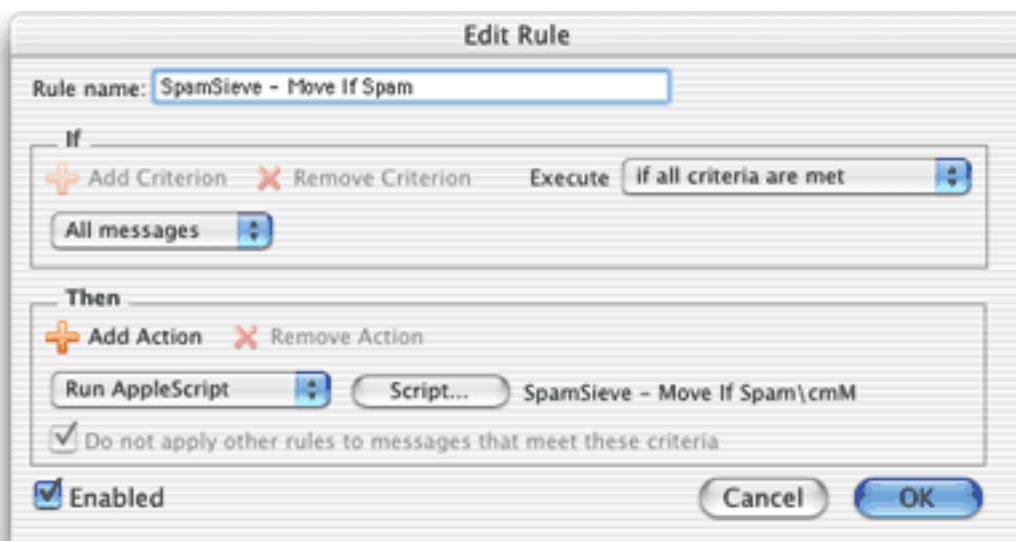


Be sure to create the kind of rule that is appropriate for your account type, e.g. a POP rule for a POP account or an IMAP rule for an IMAP account. If you have more than one kind of account, you will need to create a rule for each account type.

It is important that you create the rules exactly as shown. Do not add additional actions below the action that runs the AppleScript. Such actions would apply to all messages, which is probably not what you want. To customize what Entourage does when SpamSieve finds a spam message, you need to edit the AppleScript rather than the rule.

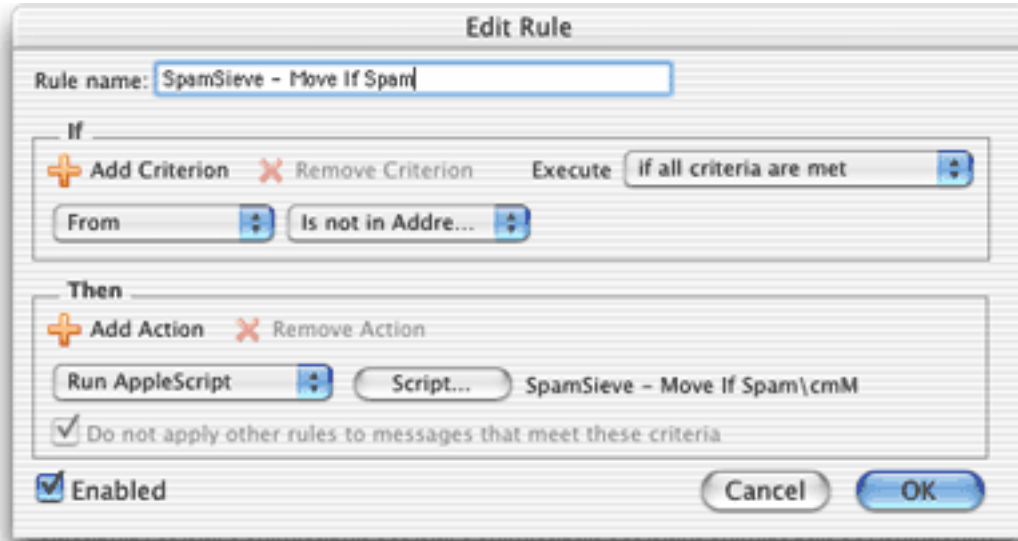
5.3.3 Moving Predicted Spam Messages

If, instead, you want SpamSieve to move suspected spam messages to a **Spam** folder, set up the mail rule to use the **SpamSieve - Move If Spam** script instead.



5.3.4 Using the Address Book as a Whitelist

To make sure that SpamSieve never marks messages from people in your Entourage address book as spam, set up the **If** section of the rule like so:



5.3.5 IMAP Accounts

Entourage does not support moving IMAP messages via AppleScript, so if you use IMAP the **SpamSieve - Move If Spam** script will not move spam messages into your **Spam** folder.

The **SpamSieve - Add Spam** and **SpamSieve - Move If Spam** contain an experimental workaround for moving IMAP messages. You can enable this by editing the scripts in Script Editor and changing the `false` after `tryToMoveIMAPMessages` to `true`. However, some users have found that this exposes a bug in Entourage, causing it to crash.

If you do not require IMAP, you can try creating a POP account in Entourage and re-entering your account information. Many IMAP accounts also work via POP, and this will allow SpamSieve to move the messages that it thinks are spam.

Alternatively, you can create an Entourage rule that moves messages that SpamSieve has marked as junk into another folder. After receiving mail, manually apply this rule to the messages in your IMAP account.

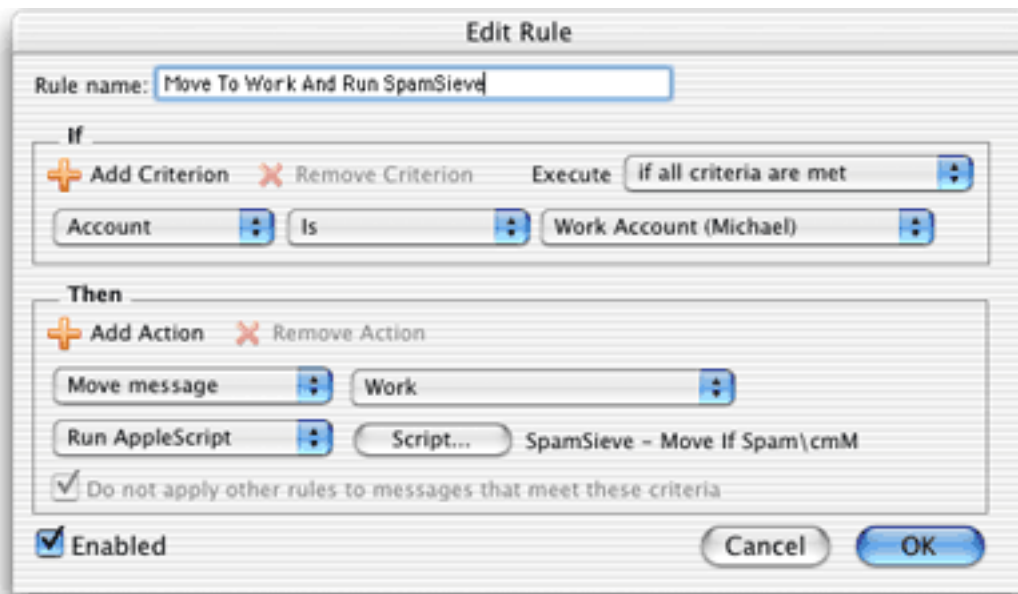
Yet another alternative is to use a custom view. Make a custom view of your IMAP account that looks for messages that are not junk. In this way, you can view your good messages without being distracted by spams.

5.3.6 Advanced Rules

Two complications are that once an Entourage rule runs an AppleScript or moves a message, it cannot apply any more rules to that message. Here are some ways to work around this.

One option is to order your rules so that Entourage applies the SpamSieve rule after all your other rules. With this approach, you can filter your good messages into folders however you want. Any mail that is not moved into another folder will remain in your inbox. Then, the SpamSieve rule will either mark the spams as junk or move them to a **Spam** folder. The disadvantage to this approach is that SpamSieve cannot catch any spams among the messages that were moved by your other rules.

Another option is to add the SpamSieve AppleScript action to each rule that moves messages. For instance, suppose you have a rule that moves all the messages from your **Work Account** account into a **Work** folder. You could set up the rule like this:



Now, messages sent to that account will be moved to the **Work** folder. Spam messages sent to that account will be moved to the **Spam** folder.

You can add the SpamSieve AppleScript action to every rule that moves messages and also to a “catch-all” rule that applies to messages that aren’t moved. Then SpamSieve will be able to filter all the messages that you receive.

Please contact spamsieve@c-command.com⁷ if you have trouble setting up Entourage to filter messages the way you want.

5.4 Eudora

5.4.1 Basic Usage

- To add spam messages to SpamSieve, select one or more of them. Choose the **Filter Messages** command in the **Special** menu. Then double-click **Add Spam**.

⁷<mailto:spamsieve@c-command.com>



- To add good messages to SpamSieve, select one or more of them. Choose the **Filter Messages** command from the **Special** menu. Then double-click **Add Good**.
- SpamSieve will mark or move new spam messages that you receive, depending on how you configure the SpamSieve Eudora Helper below.
- To manually ask SpamSieve to mark or move messages that it thinks are spam, select one or more of them. Choose the **Filter Messages** command in the **Special** menu. Then double-click **Filter**.

5.4.2 Moving Predicted Spam Messages

By default, SpamSieve will move spam messages to a “Spam” folder that you create in Eudora. It will also mark good messages by setting their priority to lowest (indicated by two downward pointing carets) and mark spam messages by setting their status to transfer error (indicated by a red “X”).

By configuring the **SpamSieve Eudora Helper** applet, you can tell SpamSieve to process your good messages and spam messages in other ways. First, quit the applet. Then open it using Script Editor. The top of the script contains the following lines:

```
property moveToSpamFolder      : true  -- moves spams to a "Spam" mailbox
property markSpamMessages      : true  -- marks spams with red x
property markSpamMessagesRead : false -- marks spams as "already read"
property labelSpamMessages     : false -- colors spam messages brown
property markGoodMessages      : true  -- marks good messages with carets
property labelGoodMessages     : false -- colors good messages green
property removeSpamMessagesFromServer : false
```

You can change a **false** to **true** or a **true** to **false** to set the options the way you want. For instance, to have SpamSieve not move spam messages into a separate mailbox, change the **true** in the first line to **false**. When you are finished making changes, choose **Save** in Script Editor’s **File** menu, close the window, and then re-launch the SpamSieve Eudora Helper.

5.4.3 Eudora Limitations

The following limitations are due to problems with Eudora’s “notification” interface. They are current as of Eudora 5.2. Qualcomm has been notified of these issues and hopefully will resolve them in a future version of Eudora.

- Eudora gives messages to SpamSieve *after* all the other filters have run. It is not possible to change this ordering.
- SpamSieve cannot filter messages that are moved by other filters. For instance, if you have a filter that moves incoming messages from Steve Jobs to a separate mailbox, SpamSieve will not mark any of those messages as spam, even if a spammer pretends to be Jobs. This limitation applies to both automatic filtering of incoming mail and manual filtering of selected messages.
- Sometimes the wrong message is marked. That is, SpamSieve may decide that message A is spam and ask Eudora to mark it with a red “X”; in rare circumstances, Eudora will instead mark some other message B with the “X.” You can tell if this has happened by comparing SpamSieve’s log to the way the messages are marked in Eudora. This problem seems to occur when the **In** mailbox sorted.
- Sometimes SpamSieve never sees a message that should have been filtered. You can tell if this has happened by the absence of that message in the log. It may help to remove any “notify user” filter action that you have set up.
- Sometimes SpamSieve determines that a message is good or spam, but Eudora does not mark it all. You can tell if this has happened by comparing SpamSieve’s log to the way the messages are marked in Eudora.
- SpamSieve cannot add or filter messages that are stored in the Trash mailbox or in mailbox files outside the **Mail Folder** folder in the **Eudora Folder**. Note that this includes all IMAP messages. To access these messages, first move them to a non-trash mailbox file that is stored inside the **Mail Folder** folder.
- If you manually apply filters while Eudora is in the process of downloading mail, Eudora will show the SpamSieve dialog box twice. If this happens, just choose **Skip** the second time.
- Sometimes Eudora erroneously shows the SpamSieve dialog when you check for new mail.
- Sometimes after a long delay in talking to the mail server, Eudora stops notifying SpamSieve when it receives new messages. You can work around this by quitting and re-launching the SpamSieve Eudora Helper.

5.5 Mailsmith

Mailsmith 2.0 features direct integration with SpamSieve: you can train SpamSieve from within Mailsmith by using the **Mark as Spam** and **Mark as Non-Spam** commands in the **Message** menu, and have Mailsmith automatically route spam to a designated spam mailbox (or to the trash). For more information on how to use Mailsmith and SpamSieve together, please see Chapter 8 of the Mailsmith User Manual.

When using SpamSieve with Mailsmith, messages are marked using the **Is Spam** and **Is Not Spam** properties. Although you can use Mailsmith's **Advanced Query** feature to search on these properties, they are otherwise not visible in the user interface. Therefore, you should mark spam in a visible way, either by letting Mailsmith move it to a separate mailbox, or by setting up a filter to change the message's label based on its **Is Spam** and **Is Not Spam** properties. Otherwise, you will not be able to correct SpamSieve's mistakes to improve its accuracy.

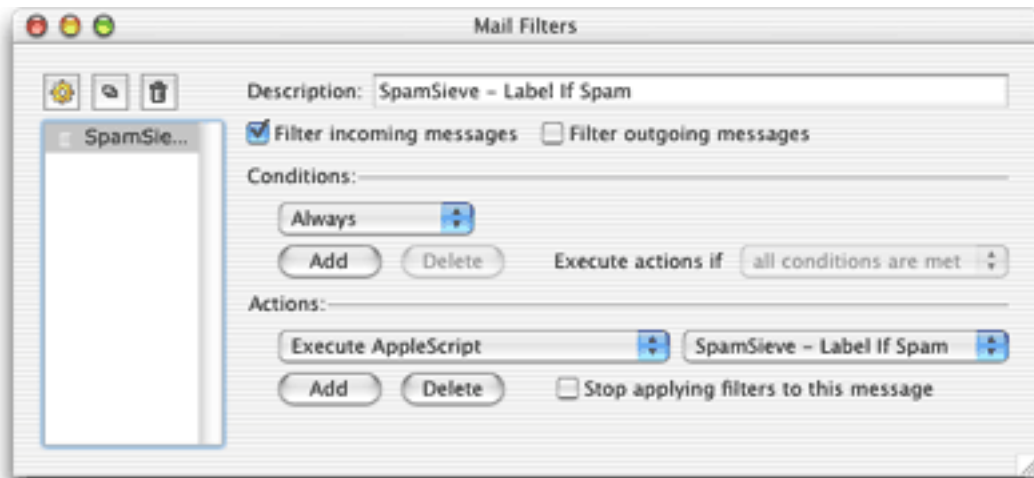
5.6 PowerMail

5.6.1 Basic Usage

- To add spam messages to SpamSieve, select one or more of them and run the **SpamSieve - Add Spam** script from the **Scripts** menu.
- To add good messages to SpamSieve, select one or more of them and run the **SpamSieve - Add Good** script from the **Scripts** menu.
- SpamSieve will label or move new spam messages that you receive, depending on how you configure PowerMail below.
- To manually ask SpamSieve to label or move messages that it thinks are spam, select them and run the **SpamSieve - Label If Spam** or the **SpamSieve - Move If Spam** script from the **Scripts** menu.

5.6.2 Labelling Predicted Spam Messages

If you want SpamSieve to color messages that it thinks are spam, set up a filter in PowerMail that looks like this:

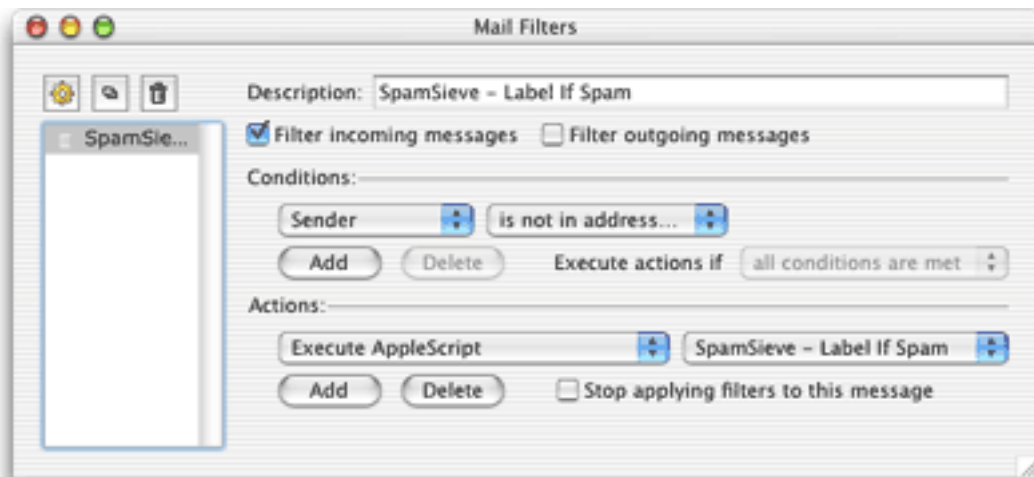


5.6.3 Moving Predicted Spam Messages

If, instead, you want SpamSieve to move suspected spam messages to a **Spam** folder, set up the filter to use the SpamSieve - Move If Spam script instead.

5.6.4 Using the Address Book as a Whitelist

To make sure that SpamSieve never marks messages from people in your PowerMail address book as spam, set up the **Conditions** section of the rule like so:



5.7 Customizing the AppleScripts

5.7.1 Compatibility Notes

Most Mac e-mail clients only work with the older resource-fork format for compiled AppleScripts. This format is no longer the Script Editor default in Mac OS X 10.2 and later. To save scripts in the older format, make sure that you edit the supplied scripts (or copies of

them) rather than creating new compiled script files from inside Script Editor. If you create a new file, Script Editor will save it in the, incompatible format.

The Script Editor 2.0 beta cannot edit the SpamSieve Eudora Helper applet. To customize the applet, use Script Editor 1.9.

5.7.2 Moving Spam Messages After Adding Them

Normally when you add spam messages to the corpus, SpamSieve moves the messages to a **Spam** folder in your e-mail client. If you prefer that it not move the messages, you can do the following. Use Script Editor to open the **SpamSieve - Add Spam** AppleScript for your e-mail client. (Eudora users do not have such a script; they already have a command for adding spam messages without moving them in the normal SpamSieve filter dialog.) The first line of the script contains the text:

```
property shouldMoveSpam : true
```

Change the **true** to **false** so that you have:

```
property shouldMoveSpam : false
```

Then save the script.

5.7.3 Integrating With Other Applications

SpamSieve's interface for integrating with third-party mail and news programs is completely open. It is possible to add support for additional programs simply by writing some AppleScripts. SpamSieve's AppleScript dictionary contains some basic information about the supported commands. However, there are some subtle, but important, points that are not discussed in the dictionary's documentation. If you would like to connect an application to SpamSieve, please contact spamsieve@c-command.com⁸ so that I may assist you.

6 The Filter Menu

6.1 Show Corpus

This command opens the **Corpus** window so that you can examine the words that SpamSieve has found in your e-mails. You can click on the name of a column to sort by that column. Click again on the column to reverse the sort direction. The meanings of the columns are as follows:

Word A word in the corpus.

Spam The number of times the word has occurred in spam messages.

Good The number of times the word has occurred in good messages.

⁸<mailto:spamsieve@c-command.com>

Total The total number of times the word has occurred.

Prob. The probability that a message is spam, given that it contains the word (and in the absence of other evidence).

You can copy the selected rows to the clipboard or drag and drop them into another application.

With the window sorted by **Word**, you can type the first few letters of a word to locate that word in the corpus. Similarly, you can sort by one of the other columns and type a number to locate the first word whose value for the sorted column matches the number you typed.

You can edit the spam and good counts associated with a word by double-clicking on the number in the **Spam** or **Good** column. Changing the numbers for important words can greatly affect SpamSieve's accuracy, so you shouldn't make changes without good reason.

6.2 Remove Word...

You can remove words that you don't want in the corpus by selecting them and using the **Remove Word...** command in the **Filter** menu. Alternatively, the **Prune Corpus...** command will automatically remove many words that are not being used (see Section 6.3).

If you remove all the words from the corpus, for example using **Select All** followed by **Remove Word...**, SpamSieve will *also* forget all the messages that you added the corpus. This will enable you to retrain SpamSieve from scratch, and SpamSieve will let you use your old messages in the retraining.

6.3 Prune Corpus...

This command removes from the corpus words that are not contributing to spam recognition. This can dramatically decrease SpamSieve's memory use and launch time. You can prune repeatedly to reduce the corpus size further. However, excessive pruning will increase the training needed to recognize new types of messages.

6.4 Show Statistics

This command opens the **Statistics** window, which displays the following information:

Good Messages The number of non-spam messages that SpamSieve has filtered.

Spam Messages The number of spam messages that SpamSieve has filtered.

False Positives The number of good messages that SpamSieve identified as spam.

False Negatives The number of spam messages that SpamSieve identified as good.

% Correct The percent of messages that SpamSieve identified correctly.

Good Messages The number of non-spam messages that are used to identify spam messages.

Spam Messages The number of spam messages that are used to identify spam messages.

Good Words The number of unique words appearing in good messages.

Spam Words The number of unique words appearing in spam messages.

Unused Words The number of words that are not yet being used to identify spam messages, because they have not occurred enough times in your messages. When this number is very large, you may wish to prune your corpus (see Section 6.3) to reduce SpamSieve’s memory usage.

Total Words The total number of unique words in the corpus.

You can copy all the statistics to the clipboard using the **Copy** command in the **Edit** menu.

Normally, SpamSieve shows statistics for all the messages that it processed since it was installed. Because the accuracy and the number of messages you receive change with time, you may wish to only see recent statistics. Click the **Set...** button at the bottom of the window to control which old statistics are hidden from view. You can edit the date and time shown in the sheet, or enter an entirely new date. SpamSieve will accept dates specified in natural language, such as “last Sunday at dinner.”

Note that all messages processed by SpamSieve 1.2.2 and earlier are recorded on the date that you first launched SpamSieve 1.3. There is no fine-grain control over which of these messages are displayed in the statistics.

6.5 Open Log

SpamSieve keeps a log of messages that it has filtered, words that it has used to decide whether the messages were spam, messages you have added to the corpus, and any errors that have occurred. This command opens the log file so that you can look at it. Normally, there is no reason (aside from curiosity) to look at the log file. However, if you believe SpamSieve is not working as it should, the log file provides useful information about what SpamSieve has done. If you find that the log file is taking up too much disk space, you can delete it at any time. SpamSieve will then start a new log file as needed.

7 Preferences

7.1 Allow duplicate good/spam messages

If you allow duplicate messages in the corpus, adding the same message twice will increase the counts for the words in that message. If you do not allow duplicate messages, the second and subsequent times you try to add a message will have no effect. By default, duplicate messages are not allowed in the corpus. This is nice because it means that you do not have

to remember which messages you have already added; accidentally adding the same message more than once will not skew the data that you are providing to SpamSieve. If you wish to intentionally skew the data, you can check one or both boxes to allow duplicates.

7.2 First check if message is in corpus

SpamSieve learns as you train it, but training is not instant. Adding a message to the corpus will not necessarily give SpamSieve enough information to classify that message correctly based only on the words in the message. However, once you have added a message to the corpus, SpamSieve *knows* whether it is good or spam, even though it might not make the correct prediction based on word probabilities. This option causes SpamSieve see if it knows whether a message is good or spam before trying to calculate its spam probability. If SpamSieve has seen the message before, it will always classify it correctly. You can disable this option if you want to see what SpamSieve would have predicted if it did not already know whether the message was good or spam.

7.3 Auto-train with good/spam messages

These options cause SpamSieve to add messages to its corpus after it predicts whether they are good or spam. Thus, after the initial training you would only need to add messages to correct SpamSieve's mistakes. Note that with either of these options enabled it is imperative that you correct SpamSieve when it makes a mistake; otherwise it will be making predictions based on incorrect information.

Auto-training with good messages tends to prevent false positives while slightly increasing false negatives. Auto-training with spam messages tends to prevent false negatives while slightly increasing false positives. Most users will train SpamSieve with plenty of good messages right after installing it, but they may not have many spam messages on hand for the initial training. Thus, it is recommended that you have SpamSieve only auto-train with spam messages to its corpus.

SpamSieve works best when trained only on misclassified messages. Once it has attained a good accuracy, you should turn off auto-training all together.

7.4 Use Apple Address Book as a whitelist

With this option enabled, SpamSieve will never predict a message to be spam if its sender's e-mail address is in the system address book. This feature requires Mac OS X 10.2 or later.

You can add addresses to the system address book using the Address Book application (located in the `/Applications` folder), or directly from an e-mail client that supports the system address book. You may want to add addresses to your whitelist without cluttering your address book with cards for each one. To do this, create a single person card in the address book using a name such as "Whitelist." Then add all the additional e-mail addresses to that one card.

Entourage and PowerMail users may prefer to use their address book as a whitelist instead of Apple's. This is described in Sections 5.3.4 and 5.6.4.

7.5 Save false negatives to disk

False negatives are spam messages that SpamSieve didn't catch. This option causes SpamSieve to save such messages for later analysis. Clicking the **Show** button opens the folder containing the saved messages. You can e-mail this folder, or selected files from it, to spamsieve-fn@c-command.com⁹. By looking at the messages that SpamSieve missed, I can improve its algorithms to catch such messages in the future.

8 Frequently Asked Questions

8.1 How can I hide SpamSieve's Dock icon?

The easiest way is to use the free [Dockless](http://homepage.mac.com/fahrenba/dockless/dockless.html)¹⁰ utility. You'll need to make the Dock icon visible again in order to configure SpamSieve's preferences or view the statistics.

8.2 What information should I include when I report a problem?

First, open the Console application in `/Applications/Utilities` and turn on "Enable crash reporting" and "Automatically display crash logs" in the preferences. If SpamSieve crashes, include the crash log in your message.

If you are reporting a problem with SpamSieve's accuracy, open the **Statistics** window and choose **Copy** in the **Edit** menu so that you can paste all your statistics into the message. Also, use the **Open Log** command in the **Filter** menu and include any relevant entries from the log.

8.3 My corpus is huge, but SpamSieve's accuracy has dropped. What should I do?

SpamSieve's accuracy normally gets better as its corpus of messages grows larger. However, a very large corpus (more than 20,000 messages) can actually dilute the information that SpamSieve uses to identify messages. To keep the accuracy high, turn off SpamSieve's auto-training feature in the preferences once you are satisfied with its accuracy. From then on, only correct it when it makes mistakes; this will prevent the corpus from growing too large.

If your corpus is already very large, you can often improve SpamSieve's accuracy by starting a fresh corpus. To do this, quit SpamSieve and locate the `~/Library/Application Support/SpamSieve/Corpus.plist` file. Move it to another folder as a backup. When you re-launch SpamSieve, it will start a fresh corpus and you can retrain it with a smaller set of messages (less than 2000). If you need to revert to your old corpus, you can drag it back into the `~/Library/Application Support/SpamSieve/` folder.

⁹<mailto:spamsieve-fn@c-command.com>

¹⁰<http://homepage.mac.com/fahrenba/dockless/dockless.html>

8.4 Where can I download the older Mac OS 9 version?

There has never been an OS 9 version of SpamSieve—sorry.

9 Contact Information

You can download the latest version of SpamSieve from the [SpamSieve Web site](#)¹¹. Questions about SpamSieve may be sent to spamsieve@c-command.com¹². I'm always looking to improve SpamSieve, so please feel free to send any feature requests to that address.

To make sure that you have the latest version of SpamSieve, you may wish to subscribe to the [SpamSieve Announcements mailing list](#)¹³. The traffic on this list is very low, only one message per new version of SpamSieve.

10 Registering

SpamSieve is shareware. If you find yourself using SpamSieve beyond a reasonable trial period, you must register it. Registration costs \$20 (US) and entitles you to free updates and support.

To register, choose **Registration...** from the **SpamSieve** menu. You can use the **Instant Registration...** button to enter your billing information from within SpamSieve or use the **Web Registration...** button to enter it at the [eSellerate Online Store](#)¹⁴ in your Web browser.

Soon after paying, you'll receive an e-mail with your serial number. Enter it in the Registration window and click **Personalize** to personalize your copy of SpamSieve. If you need to re-install SpamSieve, you can simply re-enter your name and serial number and click **Personalize**; there's no need to register again.

This is the honor system. If you use SpamSieve without registering, I probably won't know. However, registering will give me an incentive to continue updating and enhancing SpamSieve, and to write more Mac software. And you won't have to look at the shareware reminders anymore.

11 Notes and Limitations

- Some users have reported that when SpamSieve is a login item it quits at launch with an error about an `NSPortTimeoutException`. To prevent this problem, simply do not make SpamSieve a login item. Your e-mail client will launch it automatically when it begins filtering messages.

¹¹<http://www.c-command.com/spamsieve/>

¹²<mailto:spamsieve@c-command.com>

¹³<http://www.c-command.com/spamsieve/support.shtml>

¹⁴<http://store.eSellerate.net/mt/store>

12 Version History

1.3.1—June 18, 2003

- Added direct integration with Mailsmith 2.0 and later. Enabling SpamSieve is as easy as clicking a checkbox. You can train SpamSieve directly from Mailsmith’s Message menu. Bare Bones Software has seamlessly integrated it with Mailsmith’s powerful filtering system, and Mailsmith knows not to bounce its Dock icon after receiving a batch of messages that are all spam.
- Fixed crashing bug triggered by incorrectly encoded headers.
- Regex substitutions are faster and much more memory efficient.
- When adding spam messages to the corpus, the default is now for SpamSieve to move them to the **Spam** folder.
- The PowerMail **Move If Spam** script now changes the color of spam messages.
- The Emler scripts now pass text and HTML attachments on to SpamSieve for analysis.
- Added instructions for using the Entourage and PowerMail address books as whitelists.
- Compacted the ED frameworks to reduce application size and memory use.
- Disabled SQLite’s file locking so that SpamSieve’s data folder can now be located on an AppleShare volume.
- Caches the Address Book to speed whitelist lookups 100 fold.
- The statistics database is faster due to an updated version of SQLite.
- Fixed bad pointer in header extractor that caused unnecessary fallbacks to the secondary parser (reducing accuracy).
- Added experimental support for moving Entourage messages on IMAP accounts to the (local) **Spam** folder. This can be enabled by editing the scripts with Script Editor.
- For clarity, the names of AppleScripts that ask SpamSieve to predict the category of a message now contain the word “if.”
- Added lots of minor clarifications to the documentation.

1.3—February 11, 2003

- More resilient to spammers' tricks for obfuscating words.
- Can use e-mail addresses in the system Address Book as a whitelist. Messages sent from those addresses will never be marked as spam.
- Greatly reduced overall memory usage as well as launch and quit times.
- Can save false negatives to disk for later reporting to SpamSieve's developer.
- You can edit the spam and good counts associated with a word, remove selected words from the corpus, and reset the corpus entirely.
- Type-ahead navigation in the **Corpus** window. Type the first few letters of a word or number to select it (and scroll to it).
- You can hide statistics from before a set date, to better see the current accuracy and spam reception rate.
- Improvements to the **Corpus** window: Shows all words rather than only those considered statistically significant. Re-sorting by numeric columns is twice as fast. You can copy the selected rows to the clipboard or drag them to another application. The selection is preserved when you change the sort column, you can sort in descending order, and the sorted column is remembered between launches. The Home and End keys work.
- The **Prune Corpus** command now tells you how many words it would remove and asks for confirmation.
- The statistics tracking is smarter about handling duplicate messages.
- The statistics have tooltips explaining what they mean, and you can copy all of the statistics to the clipboard at once.
- Improved accuracy tracking of PowerMail and EMailer messages.
- Eudora Integration: Can mark spam messages as read and/or mark them for removal from the server.
- Expanded the AppleScript dictionary, to enable better integration with mail and news clients.
- Entourage Integration: Creates Junk category if there isn't one, and can mark spam messages as read.
- Mailsmith Integration: The adding scripts now set the appropriate message properties.
- Better parsing of messages with illegal characters in the headers.

- SpamSieve’s Info.plist file contains an **LSUIElement** entry. Change the 0 to a 1 to hide the application’s Dock icon. (You’ll need to change it back to access the preferences.)
- The message count display has moved from the **Corpus** window to the **Statistics** window.
- Better error message when the corpus couldn’t be saved.
- Added tooltips to preferences.
- The registration window gives better feedback when you personalize.
- Better recovery from errors in the corpus file.
- The secondary parser is better at handling DOS linebreaks.

1.2.2—November 20, 2002

- Fixed bug in the PowerMail **Add Good** script.
- Added uninstaller for Eudora users.
- Better handling of errors while adding messages to the corpus.
- Removed bloat from the Entourage **Mark Spam** script.
- The application icon now has an alpha channel, so it doesn’t appear with a white halo when viewed on a colored background.
- Minor changes to the manual.

1.2.1—November 18, 2002

- Modified Info.plist to work around a bug in Mac OS X 10.1 that could cause the Finder to crash when launching SpamSieve.

1.2—November 18, 2002

- Added support for EMailer 2.0v3 and Eudora (5.2 and later).
- Decodes base64 and quoted-printable text parts, thus finding words that spammers try to hide from anti-spam software.
- Decodes subjects that use different character sets (e.g. big5).
- Adds special tokens for MIME entities such as part boundaries and uninterpretable message parts.

- Keeps track of the messages added to the corpus, and can optionally prevent you from adding the same message more than once (biasing the counts). Thus, you no longer have to remember which messages you’ve already added.
- You can now “undo” adds to the corpus, e.g. if you added a message as good when you meant to add it as spam.
- Can now add messages to the corpus as they are filtered, so after the initial training you only have to add messages when SpamSieve makes a mistake.
- When filtering a message, SpamSieve can optionally check whether the message is in the corpus. If it is, SpamSieve looks up the answer rather than trying to predict. One use of this feature is that if SpamSieve makes a mistake, you can **Add Spam** and then **Label/Move If Spam** and be sure that the message will be labelled/moved.
- Keeps a log of additions to the corpus, filtering results, and errors.
- Mailsmith: If SpamSieve thinks a message is spam, it sets the **deleted** property of the message to true; otherwise it sets the **flagged** property of the message to true. Therefore, if SpamSieve has classified the message then exactly one of the properties will be true, and if it hasn’t they’ll both be false. (Normally, neither of these message properties is used by Mailsmith itself.)
- Entourage and PowerMail: If you tell SpamSieve to move spam messages to a spam folder and the spam folder doesn’t exist, the script will create the spam folder for you.
- When you add spam messages to the corpus, can optionally move them to a **Spam** folder.
- Added status indicators in the Dock icon (like Norton DiskLight).
- The spam probability of unknown words is now 0.4 instead of 0.2.
- The **Corpus** window uses less memory and sorts much faster.
- Accuracy tracking is faster and uses less memory and disk space.
- Fixed bug where accuracy tracking didn’t work for some Mailsmith messages with multiple parts.
- Improved the manual’s instructions for e-mail client integration.
- Compiled with GCC 3 for greater speed.
- Uses the latest version of the eSellerate SDK, which eliminates a crash at startup under certain circumstances.
- No longer shows the “Upgrading From 1.0” message when starting with a blank corpus.

1.1—September 19, 2002

- E-Mail Client Integration
 - Added support for PowerMail.
 - Added instructions and an AppleScript for making Mailsmith download and filter mail faster.
 - Added an AppleScript for Entourage that moves spam into a Junk folder.
- Performance
 - Launches about 60% faster than 1.0.
 - You can now prune the corpus to remove words that are taking up memory without contributing to spam recognition. This can also dramatically decrease SpamSieve's launch time.
 - Recalculating spam probabilities is about 10% faster and uses less memory.
 - Quitting is faster because SpamSieve now writes corpus changes to disk during idle time.
 - Saving the corpus is slightly faster.
- Displays statistics about the number of messages filtered, SpamSieve's accuracy, and the types of words in the corpus.
- SpamAssassin's X-Spam-Status headers are now treated as single words. This means that if SpamAssassin is running on your mail server, SpamSieve will learn to respect (or ignore) its judgement.
- Does a better job of ignoring e-mail attachments, thus reducing corpus bloat.
- Installs the eSellerate Engine if it's not present, thus enabling "Instant Registration" for more users.
- Asking SpamSieve to categorize a message now forces an update of all the word probabilities. Previously, the update only happened during idle time.
- Highlights the sorted column in the **Corpus** window. The columns themselves have shorter names. There's a new "Total" column. Auto-resizing of the columns works better. You can now manually resize any column, and manual resizings and reorderings are saved between launches.
- Shows fatal errors as alert panels rather than just printing them on the console.
- The Corpus.plist data file is now sorted by word. This makes it easier to examine the corpus manually, and to compare it to other users' corpuses.

1.0—September 10, 2002

- First public release.

13 Legal Stuff

SpamSieve

SpamSieve and this manual are copyright © 2002–2003 by [Michael Tsai](#)¹⁵. All rights reserved.

Please distribute the unmodified **SpamSieve-1.3.1.dmg** file on the Web, LANs, compilation CD-ROMs, etc. Please do not charge for it (beyond a reasonable cost for media), or distribute the contents of the image file in isolation.

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The following open-source components are used in SpamSieve:

EDCommon

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¹⁵<mailto:mjt@c-command.com>

¹⁶<http://www.mulle-kybernetik.com/software/EDFrameworks/download.html#EDCommon>

EDMessage

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PCRE

Regular expression support is provided by the [PCRE](#)¹⁸ library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England.

A Mailsmith Extras

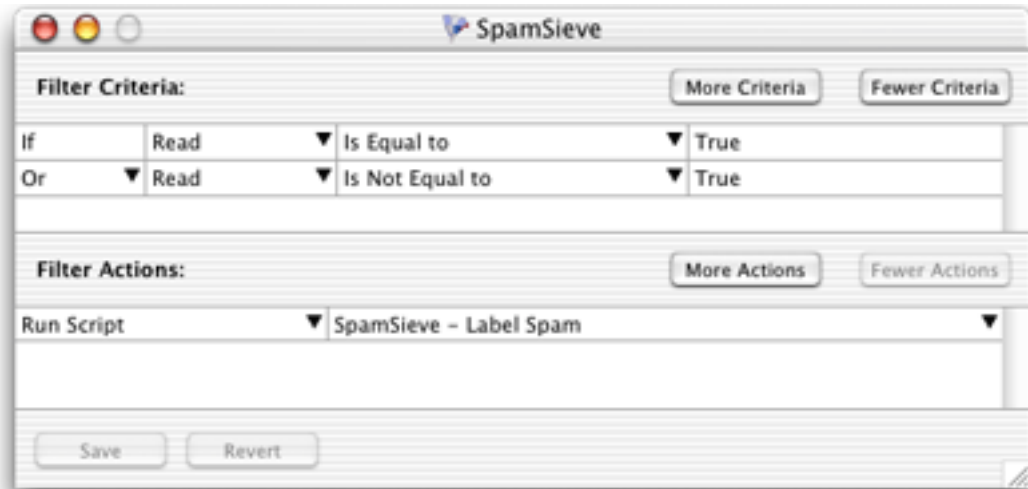
Mailsmith 2.0 and later integrate directly with SpamSieve. This is described in Section 5.5.

SpamSieve also includes a **Mailsmith Extras** folder, which contains AppleScripts for use with Mailsmith. These make it possible for scripters to further customize and automate the labelling and marking of messages in Mailsmith. If you are using Mailsmith 2.0 and do not write AppleScripts, you can ignore the **Mailsmith Extras** folder.

You can add the AppleScripts to Mailsmith’s **Scripts** menu by copying them to the **Scripts** folder inside the **Mailsmith Support** folder. A filter such as the following may be used to change the labels of incoming spam messages.

¹⁷<http://www.mulle-kybernetik.com/software/EDFrameworks/download.html#EDMessage>

¹⁸<http://www.pcre.org>



This filter will pass all messages along to SpamSieve for analysis. It will set the **Is Spam** or **Is Not Spam** property of the message, and change the label of the message if it is spam. This is roughly equivalent to enabling SpamSieve in Mailsmith's preferences, but because it uses AppleScript it is more customizable. Additionally, you can change the filter criteria to pass only select messages along to SpamSieve.

For best results, use either Mailsmith's direct integration with SpamSieve or AppleScripts like those in the **Mailsmith Extras** folder. Do not mix and match them.