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RAV AntiVirus for Mail Servers (Unices and MacOS X)

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Address: 223, Mihai Bravu Blvd, 3rd district, Bucharest, Romania
Phone/Fax: +40-21-321.78.03, Hotline: +40-21-321.78.59

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Part I: Introduction

Congratulations! You have just acquired a **RAV AntiVirus** product. **RAV AntiVirus** is one of the best antivirus programs, ranked among the first ten in the world.

RAV AntiVirus products and the documentation associated to these products are the exclusive property of GeCAD Software. The products are licensed to the users under the terms of the License Agreement accompanying each product, so please read carefully this document.

We suggest you to take a moment to fill the *Registration Form* attached to the *License Certificate* or register your product on the manufacturer's site. The personal data you fill in this form is strictly confidential and will only be recorded in our database of registered customers to keep you informed on new developments and updates and to activate your technical support account. Any suggestion you make will be taken into consideration for future versions.

Note: Because of the attention we pay to delivering highly efficient antivirus software, combined with the rapid evolution of viruses and implementation of features requested by our customers, this document may not be up to date. For latest info, please visit http://www.ravantivirus.com/support/documentation.php.

Structure of this document

This document is structured in four major components and two appendixes.

The first part, *Introduction*, includes information on the *Scope* of this document, its *Intended audience* and the *Related documentation*. You are also briefed on the manufacturer of **RAV AntiVirus**, GeCAD Software, and informed about modalities you can use to obtain the *Technical support* you might need for the product you have acquired.

The second part, *RAV AntiVirus Product Family*, is an overview of the products included in **RAV AntiVirus** product family (**RAV AntiVirus Desktop**, **RAV AntiVirus for Mail Servers**, **RAV AntiVirus MailFilter**, **RAV AntiVirus for File Servers** and **RAV AntiVirus for Instant Messengers**). All these products are based on *RAV Engine*, a revolutionary antivirus engine. The cutting-edge technologies included in RAV Engine and the most important updates included in RAV Engine version 8.9 are also included in this *RAV AntiVirus Product Family* part.

The third part of the document, *RAV AntiVirus for Mail Servers*, includes some sections (*Short description, What can it do, How does it work, Who should use it*) briefly presenting **RAV AntiVirus for Mail Servers**, its functionality and the potential users. Sections describing the *Currently supported operating systems and MTAs* and the *Hardware and software requirements* are also included, as well as a section presenting in more detail the *features* of **RAV AntiVirus for Mail Servers**. An *Awards* section containing international acknowledgements gained by this product and a *Registration procedure* section, explaining the main principles fundamental for the license policy of our company, including a detailed description of the main differences between the three different phases in which you can use a **RAV AntiVirus** product (evaluation, registration and activation), are also included in this part of the document. The *Updates* section lets you know the available update servers for **RAV AntiVirus** products.

The fourth part of the document, *Configuration files and man pages*, includes the configuration file for **ravmd**, as well as the **man** pages for **ravmd**, **ravav**, **ravupdate**, and the external filters for the MTAs currently supported by **RAV AntiVirus for Mail Servers**.

Two appendixes (*Bug Report Form* and *Index*) are included at the end of the document.

Conventions used in this document

Headings are offered for a better structuring of the document.

Links indicate internal *bookmarks* (links to other sections of this document) or external *URLs.* Clicking on them offers an easier navigation and a more comprehensive understanding of the scope and meaning of this document.

Paths are denoting code lines and paths and are not click-enabled.

Notes contain explanations and are offered in the format below.

Note: This document must be read in connection with the related documentation.

Macros

Strings proceeded by the $ character (i.e. ${BINDIR}) are used as *macros* denoting paths that are specific to the operating system you are using.

These macros have the following meaning:

${BINDIR} - location of RAV executables;

${LIBDIR} - location of RAV libraries;

${ETCDIR} - location of RAV configuration files;

${DATADIR} - location of RAV logs, temporary files, quarantine folder, activation key, etc.;

${RAVEDIR} - location of RAV Engine.

The corresponding paths should replace these macros as follows:

For Linux and Solaris:

${BINDIR} = /opt/rav/bin

${LIBDIR} = /opt/rav/lib

${ETCDIR} = /etc/opt/rav

${DATADIR} = /var/opt/rav

${RAVEDIR} = /var/opt/rav/rave for products running on i386 platforms, /var/opt/rav/s390rave for products running Linux on s390 platforms, /var/opt/rav/spc_rave for products running on sparc platforms and /var/opt/rav/ppc_rave for products running Linux on PowerPC platforms.

For FreeBSD, NetBSD, BSDi and MacOS X:

${BINDIR} = /usr/local/bin

${LIBDIR} = /usr/local/lib/rav

${ETCDIR} = /usr/local/etc/rav

${DATADIR} = /var/rav

${RAVEDIR} = /var/rav/rave for products running on i386 platforms.

For OpenBSD:

${BINDIR} = /usr/local/bin

${LIBDIR} = /usr/local/lib/rav

${ETCDIR} = /etc/rav

${DATADIR} = /var/rav

${RAVEDIR} = /var/rav/rave for products running on i386 platforms.

Scope

This document describes the features and functionality of **RAV AntiVirus for Unices and MacOS X Mail Servers** as of the version specified here. Additional valuable documentation is also separately available - see the Related Documentation section below.

To make sure you will be efficiently using **RAV AntiVirus for Mail Servers** from the very beginning, we strongly recommend you to read carefully this *User Guide*, even if you have been using a previous version of this product.

Intended audience

This *User Guide* is intended for administrators responsible with the installation of **RAV AntiVirus for Unices and MacOS X Mail Servers**. These persons should have a strong and comprehensive knowledge and an extensive working experience in the operating systems the product is designed for.

Related documentation

Here is a list of documents that should be used in connection with this document:

- **RAV AntiVirus for Mail Servers** – *Release Notes* (available here);
- **RAV AntiVirus for Mail Servers** – *Product Sheet* (available here);
- **RAV AntiVirus for DMail** on Windows - *User Guide* (available here);
- **RAV AntiVirus for CommuniGate Pro** on Windows - *User Guide* (available here);
- **WebConfig** - *Technical Note* (available here);
- **WebConfig** - *Release Notes* (available here);
- **WebConfig** page (available here).

These documents and other up-to-date documentation concerning **RAV AntiVirus** products, as well as white papers on security policies and the latest information about viruses are available on our web site (http://www.ravantivirus.com/support/documentation.php).

About GeCAD Software

GeCAD Software is a leading technology company specialized in providing top anti-virus solutions for all categories of users. After releasing its first antivirus program, back in 1994,

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GeCAD Software has grown to be represented, by Distributors, Resellers and OEM Partners, on all the continents around the world. Our strong commitment towards quality has secured us a privileged position in a fast-evolving market, the key advantage being a state of art product based on cutting-edge technologies.

Founded in 1992, GeCAD Software is headquartered in Bucharest, Romania, and its activity is focused on producing, developing and internationally distributing high-quality antivirus products.

Technical support

We value very much your opinion and try to fulfil our customers' requests as soon as possible. Only you, the user of **RAV AntiVirus**, can help us make the product better and more suitable to your needs. Therefore, your suggestions are more than welcomed.

For any details regarding the installation and the functionality of this product, please contact the local dealer you have bought the product from. If you consider you do not receive an adequate technical support, please contact us.

For any suggestions or problems regarding the copyright, the guarantee and other aspects related to **RAV AntiVirus** products or data recovery from a destructive viral attack, please contact us at the following address:

GeCAD Software S.R.L.
Address: 223, Mihai Bravu Blvd, 3rd district, Bucharest, ROMANIA
Phone/Fax: +40-21-321 78 03
Hotline: +40-21-321 78 59
E-mail:
Sales: international.sales@ravantivirus.com
Technical support: support@ravantivirus.com
Website: http://www.ravantivirus.com/support

To keep in contact with other users of **RAV AntiVirus** products, join the *discussion lists* available for our products or subscribe to the free weekly *newsletter* edited by GeCAD Software. You should also consider using the *Virus Encyclopedia* and our *Knowledge Base* and subscribing to *RAV Outbreak Security Service* and *RAV Newsletter*, services offered to you free of charge and described below.

RAV Discussion Lists

Interesting ideas and insights, installation and configuration scenarios, troubleshooting solutions and other information are also available *via* specialized *discussion lists* for **RAV Antivirus** products:

- *rav-cgate* – **RAV AntiVirus** for CommuniGate Pro;
- *rav-courier* – **RAV AntiVirus** for Courier;
- *rav-desktop-unices* – **RAV AntiVirus Desktop** for Unices;
- *rav-desktop-windows* – **RAV AntiVirus Desktop** for Windows;
- *rav-dmail* – **RAV AntiVirus** for DMail;
- *rav-enterprise* – **RAV AntiVirus Enterprise**;
- *rav-exchange* – **RAV AntiVirus for MS Exchange Server**;

- *rav-exim* – **RAV AntiVirus** for Exim;
- *rav-mailfilter* – **RAV AntiVirus MailFilter** for POP3, IMAP, SMTP;
- *rav-novell* – **RAV AntiVirus for Novell Networks**;
- *rav-postfix* – **RAV AntiVirus** for Postfix;
- *rav-qmail* – **RAV AntiVirus** for Qmail;
- *rav-sendmail* – **RAV AntiVirus** for Sendmail;
- *rav-fileservers* – **RAV AntiVirus for File Servers (Win32)**;
- *rav-samba* – **RAV AntiVirus for File Server (Samba)**.

You can subscribe to these discussion lists by visiting our website http://www.ravantivirus.com/ (*RAV Discussion Lists* section) or by sending an empty e-mail message to: listname-subscribe@lists.ravantivirus.com (replace "listname" with the list you want to subscribe to).

RAV Newsletter

A free *newsletter*, containing virus alerts, advisories and other useful advices for avoiding virus disasters, as well as information regarding updates, tips and tricks and insights on **RAV AntiVirus** products, is also available from GeCAD Software. You can subscribe to this newsletter using this link: http://www.ravantivirus.com/pages/newsletter.php.

Knowledge Base

The Knowledge Base is a new service offered to you by the producer of **RAV AntiVirus**. You can access it at the following address: http://www.ravantivirus.com/kb. Here you can find technical information regarding the configuration and usage of all the products included in **RAV AntiVirus** family (**RAV AntiVirus Desktop**, **RAV AntiVirus for Mail Servers**, **RAV AntiVirus for Windows File Servers**, **RAV AntiVirus MailFilter** and **RAV AntiVirus for Instant Messengers**).

Virus Encyclopedia

RAV Virus Encyclopedia is a professional knowledge resource, specially designed to allow you being always up-to-date with the latest virus information and threats. **RAV Virus Encyclopedia** includes information on the most important and interesting viruses, including details on the *Description*, *Payload*, *Likelihood*, *Technical Description*, *Removal Instructions* and other important info. **RAV Virus Encyclopedia** is available at the following address: http://www.ravantivirus.com/pages/virus.php

RAV Outbreak Security Service

RAV Outbreak Security Service is a free subscription-based service offered by GeCAD Software as first-hand information alerting users in case of **virus outbreaks**. To subscribe to **RAV Outbreak Security Service**, visit http://www.ravantivirus.com/pages/outbreak.php, just enter your e-mail address in the corresponding text field and press on the **Subscribe** button. You will receive real-time customized notifications on the most recent and dangerous threats to your system's security.

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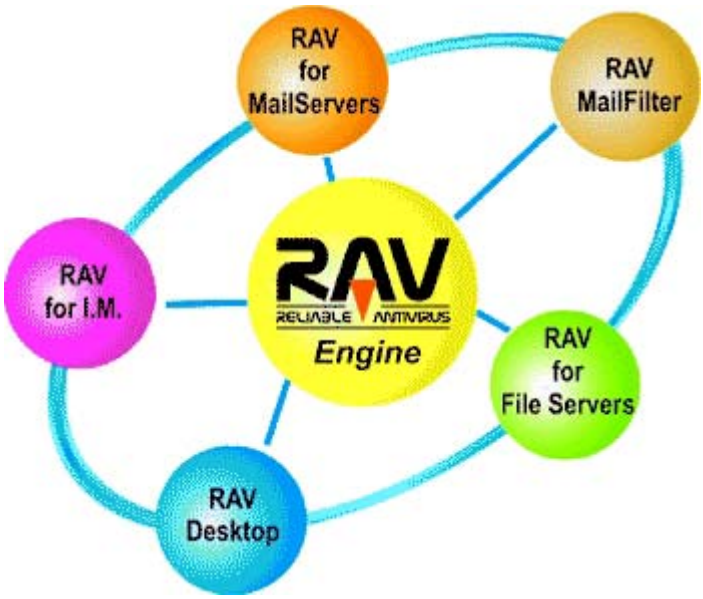
Part II: RAV AntiVirus Product Family

The products

RAV AntiVirus product family is currently having the following members:

- **RAV AntiVirus Desktop** (for Windows and Unices);
- **RAV AntiVirus for Mail Servers**;
- **RAV AntiVirus MailFilter**;
- **RAV AntiVirus for File Servers** (Windows and Samba);
- **RAV AntiVirus for Instant Messengers**.



RAV AntiVirus for Mail Servers and all the other products included in **RAV AntiVirus** family are based on *RAV Engine*, now at version 8.9.

The Engine

RAV Engine combines the operational strength, the extensibility, the scalability, the scanning speed and the robustness needed in the fight against viruses and other malicious software (Trojans, worms, hoaxes, etc.). At this writing, RAV Engine includes in its database 76,982 distinct malware signatures and the RAV Antivirus Research Team daily adds new signatures to the RAV Engine's database. RAV Engine includes modules for scanning **inside archives** that detect infected files in most common types of archives and can scan archives inside archives no matter how deep they go. RAV Engine also scans inside **packed executables** (lzexe, pklite, cryptcom, wwpack, aspack, pepack, vgcrypt, upx). Working with Virtual File Systems, RAV Engine can scan the processes in memory and IFS chains, thus detecting and cleaning resident viruses like CIH.

RAV Engine also implements two extra modules (**bulk mail** and **content filtering**) that should help the user customize the product to work the way he/she wants.

Cutting-edge technologies included in RAV Engine

RAV Engine, now at version 8.9, has some unique features, ranking it among the best antivirus engines in the world. Here is a short description of the cutting-edge technologies included in the latest version of RAV Engine.

The TPI (Total Platform Independent) technology

The same engine is used for detecting and cleaning malwares for each operating system and platform **RAV AntiVirus** is installed on. Thus, the intelligibility, the unity and the easy update of our programs are logically ensured for all the products from RAV **AntiVirus** family (**RAV AntiVirus Desktop**, **RAV AntiVirus for Mail Servers**, **RAV AntiVirus for File Servers**, **RAV AntiVirus MailFilter** and **RAV AntiVirus for Instant Messengers**).

The IC (Integrity Checker) technology

When the files are scanned for the first time, the detection engine creates a database with all the information it has gathered during the scanning process. When doing a second scan, only the new or changed files are scanned, therefore increasing the detection speed with over 50%.

The MLES (Multi Layer Embedded Scanning) technology

RAV engine is promptly responding to any threat, scanning embedded objects on multiple layers, without affecting the detection speed or slowing down the machine it is installed on.

The HMETH (heuristic method) technology

Using this technology for all electronic threats, RAV Engine can study the behaviour of eventual malwares (malicious software, like worms, Trojans and hoaxes) and propose different methods for handling it. Therefore, a virus can be detected and cleaned even if its signature does not exist in the database.

The BMS (Bulk Mail Stop) technology

Bulk mails are causing daily headaches to system administrators and other people. RAV Engine can help you get rid of these unsolicited messages, using a heuristic detection of bulk messages based on mail headers and bodies.

The user can choose between four different levels of accuracy (Low, Medium, High and Very High) and can customize different actions (delete, block, reject) for each level.

The CF (Content filtering) technology

RAV Engine scans mail messages on three different levels: **Subject**, **Attachments names** and **Body**, looking for regular expressions or user-defined strings. RAV Engine can execute the actions you specify for mail messages matching these criteria.

The CUP (Cumulative Update Plug-ins) technology

The cumulative update is another advantage of RAV Engine, being used to add to the main signatures database only the latest available signatures. This procedure results in extremely small files used for the update (10-15Kb), very little download time (5-10 seconds for a 28,8Kbs connection speed) and better management of the virus signatures.

RAV Engine 8.9 vs. 8.7

RAV Engine version 8.9 was released on August 28th, 2002. In comparison with the precedent version of RAV Engine (8.7), the current version is enjoying the following improvements:

- A heuristic SPAM (Bulk mail) detection module was included. To make updating for this module more efficient, a new VDM module was included in RAVE's distribution (filters.vdm).
- RAR3 archives are now supported.
- Improved scanning inside CHM/HXS embedded files.
- Improved scanning inside SFX archives. Support for these files was significantly improved, and the number of supported types has increased.
- Improved heuristics/generic detection for Visual Basic-compiled programs.
- Improved heuristics/generic detection for .NET compiled programs.
- Added heuristics/generic detection for Visual C compiled programs.
- Added detection for several heavy-polymorphic Win32 viruses.
- Added support for a.out executable files, and improved the support for damaged ELF files.
- Improved the LE/LX executable parser to handle damaged/handcrafted files.
- Scanning inside files packed by several installers was included.
- Scanning of OMF object files is now supported.
- Damaged (without headers) MIME files are now supported.
- PEPatch, PaquetBuilder, PrivateEXE v2.2, EPPE, PeBundle, Shrinker, SPEC AcidCrypt support was included/improved.
- Improved the loading time and the scanning speed under Win95/Win98 VxD platform.
- Improved the **Scanner** process under Windows 9x and Windows NT.

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Part III: RAV AntiVirus for Mail Servers

Short description

RAV AntiVirus for Mail Servers is a highly customisable award-winning antivirus program for mail servers using different operating systems on different platforms. Besides its main antivirus functionality, starting with its 8.4.0 version, **RAV AntiVirus for Mail Servers** also acts as **antispam** program, due to a combination between the new bulk mail module (available in RAV Engine starting with version 8.9) and features already implemented in older versions of **ravmd**, i.e. **Real-time Blackhole List (RBL)** and the **White/Black List (WBL)**.

What can the product do

RAV AntiVirus for Mail Servers scans and cleans mail messages and all types of attachments including archives, exe files, embedded files, etc. It helps you avoid Internet **malwares** (viruses, worms, Trojans, hoaxes, etc.), **bulk mail** and **information leaks**. **RAV AntiVirus for Mail Servers** is scanning, detecting and removing any electronic threats from the messages flowing to/from your mail server, therefore protecting important data for your company and preventing your computers from being infected by viruses, worms, Trojans and other malwares.

When finding infected/suspicious objects, **customisable warning mails** can be sent to the sender, receiver(s) and system administrator(s), according to the specified settings.

The **content filtering** module of **RAV AntiVirus for Mail Servers** allows you to define different rules for filtering incoming/outgoing messages at different levels (subject, body, attachment file name and attachment contents) and specify actions to be taken for messages matching the content filtering rules.

How does it work

The product contains a daemon based on *RAV Engine* (**ravmd**, RAV **m**ail **d**aemon) and a filter module interfacing the daemon with your mail server (**ravcgate**, **ravcourier**, **ravdmail**, **ravexim**, **RAVMilter**, **ravpostfix**, **ravqmail** or **ravsendmail**).

When a mail message is reaching a mail server protected by **RAV AntiVirus for Mail Servers**, it is intercepted by the filter and sent to the daemon for scanning (the scan process is executed using RAV Engine).

Assuming the message is clean, it is sent back to the filter, which will decode and redirect it to the mail server. Then the message can be sent - scanned and cleaned – to the initial destination.

If the message is not clean, customisable actions are taken, according to the options set by the system administrator.

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Who should use it

RAV AntiVirus for Mail Servers is targeting three categories of users:

- **large companies**, with heavy traffic on their mail servers and demanding security policies;
- **Internet Solution Providers** (ISPs – over 60% of them are using Linux-based mail servers). **RAV AntiVirus for Mail Servers** is the perfect solution for ISPs are dealing with heavy traffic and large amount of clients. **RAV AntiVirus for Mail Servers** can improve the services ISPs are providing to their customers by scanning the mail flow and adding protection against viruses for the hosted domains; and
- **small companies** willing to protect their internet traffic at low cost.

No matter if you're a big or small company or an ISP, the protection offered by **RAV AntiVirus for Mail Servers** is always working on multiple levels:

- You are protected of viruses and other malwares that might try to infect your machines **coming** from the Internet, as mail attachments or mail messages.
- The **outgoing** flow is scanned for viruses and other malwares.

You can also customize the outgoing mail flow for not allowing **sensible information** to leave your company.

Awards

Starting with March 1st, 2002, **RAV AntiVirus for Mail Servers** (Linux) is awarded the West Coast Labs'[1] Checkmark Certificate ***Level 1*** and ***Level 2***, the two standards to be achieved by antivirus products. **RAV AntiVirus for Mail Servers** is the first (and so far the only) anti-virus software winning both certificates for Linux-based mail servers. The Checkmark Certificate system establishes standards for computer security products, giving end users a clear idea on reliable anti-virus products.

For a product to be certified to Anti-Virus Checkmark, *Level One*, the product must be able to detect all "in the wild" viruses. According to Checkmark, "In the Wild" viruses are currently defined as those appearing on The Wildlist Organization's "In the Wild" list and reported as such by more than one person.

For a product to be certified to Anti-Virus Checkmark, *Level Two*, the product must be able to comply with Checkmark Level One and, in addition, disinfect all "in the wild" viruses capable of being disinfected. The product must also detect all viruses on the wild list more than one month old.

After rigorous tests, conducted in the West Coast Labs, **RAV AntiVirus for Mail Servers (Linux)** proved to successfully detect and disinfect 100% of all in-the-wild types of viruses[2]. Anti-Virus Checkmark Level 2 being granted to **RAV AntiVirus for Mail Servers (Linux)** indemnify the users to have complete confidence in our product's abilities to prevent infection and disinfect all the viruses from the "In the Wild" list.

[1] West Coast Labs is an independent organization testing information security products. It is owned by West Coast Publishing Limited that also owns *SC Magazine*, the largest circulation information security magazine in the world.

[2] For an overview of different types of viruses and other malwares and methods for protecting against them please consult the white papers available on our website, **http://www.ravantivirus.com/**.

Currently supported operating systems, platforms and MTAs

RAV AntiVirus for Mail Servers is currently available for the following platforms/operating systems:

- Linux (Slackware, Mandrake, SuSe, RedHat, e-Smith, Debian, etc.) on i386 platforms;
- Linux (SuSe, RedHat and Mandrake) on s390 platforms;
- Linux (Yellow Dog) on ppc platforms;
- Linux (Suse, Mandrake, Red Hat) on Sparc platforms;
- FreeBSD on i386 platforms;
- Open BSD (2.8, 2.9 and 3.x) on i386 platforms;
- Solaris on i386 platforms;
- Solaris on Sparc platforms;
- Unixware on i386 platforms;
- NetBSD on i386 platforms;
- Mac OS X on ppc platforms;
- BSDi on i386 platforms;
- Windows NT and Windows 2000 on i386 platforms.

RAV AntiVirus for Mail Servers is currently supporting the following MTAs:

- CommuniGate Pro
- Courier
- DMail
- Exim
- MS Exchange (5.5 and 2000)
- Postfix
- Qmail
- Sendmail
- Sendmail-Milter.

Below you can find a cross-table presenting the operating systems, platforms and MTAs supported by **RAV AntiVirus for Mail Servers** at this writing.

	Linux i386	Linux s390	Linux (PowerPC)	Linux (Sparc)	FreeBSD	OpenBSD 2.8*	OpenBSD 2.9	OpenBSD 3.x	Solaris i386	Solaris (Sparc)	UnixWare 7.11*	NetBSD	WinNT/2000/XP*	MacOS X	BSDi (new)
Sendmail	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓
Sendmail Milter	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓
Qmail	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓
Postfix	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓
CommuniGate Pro	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Exim	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓
DMail	✓				✓				✓	✓			✓	✓	✓
Courier	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓		✓	
Exchange 5.5													✓		
Exchange 2000													✓		

*Comment: * = does not currently include the Antispam module.*

Further developments

GeCAD Software is currently working on developing antivirus solutions for other operating systems and platforms. For details on the developing process and other info about the characteristics of our products, please visit our website: http://www.ravantivirus.com.

Features of RAV AntiVirus for Mail Servers

Some of the distinctive features of **RAV AntiVirus for Mail Servers** are presented below:

- *Simple installation process*: The installation process is very simple and can be executed using an interactive install script (install.sh). If you want to manually install the product, you can find install instructions on the manufacturer's website;
- *Easy to configure and use:* **RAV AntiVirus for Mail Servers** is extremely easy to configure: options are available to order the actions to be taken by **RAV AntiVirus** when dealing with an infected file (**Clean, Move/Copy to Quarantine, Delete, Rename, Ignore, Reject**) or with a file containing suspicious code (**Move/Copy to Quarantine, Delete, Rename, Ignore, Reject**).
- *Complete antivirus protection:* **RAV AntiVirus for Mail Servers** scans all incoming and outgoing mail flow for the protected domains, removing malwares from all levels (subject, body, attachments). **RAV AntiVirus for Mail Servers** is also scanning archives inside archives, packed executables and multiple MIME-type encoding.
- *Enhanced e-mail traffic scanning:* **RAV AntiVirus for Mail Servers** is using the *Integrity Checker* technology: when the files are scanned for the first time, the detection engine creates a database with all the information it has gathered during the scanning process. When doing a second scan, only the new or changed files are scanned, therefore increasing the detection speed with over 50%.

- *Multi platform virus removal*: RAV Engine detects and removes Windows, Linux, Unix and DOS viruses, regardless of the operating system they're stored on or designed for.
- *Heuristic methods*: **RAV AntiVirus for Mail Servers** is using heuristic methods, to extend the protection offered to its users and act against new viruses and new versions of existing viruses.
- *Integration:* **RAV AntiVirus for Mail Servers** is an **integrated** suite, containing all the components (**antivirus**, **antispam**, **content filtering**, **group management**) in one single installation.
- *Enhanced virus scanning:* Mail attachments with multiple recipients are scanned only once, and not for all the recipients, therefore enhancing the scanning speed. Different technologies are also applied, in order to improve the speed and accuracy of the scanning process.
- *Content filtering:* All mail messages (incoming and outgoing) are scanned by **Subject, Attachment** and **Body**. This way, you can deny incoming mail messages containing suspicious objects and outgoing mail messages containing confidential information, reducing all types of threats to the very minimum. The available options for mail files matching the content filter are: **Move/Copy to Quarantine, Delete, Ignore, Reject**. For more details, please refer to the RAVMD configuration file section.
- *Group configuration:* The system administrator can define different groups of users and specify different settings for these groups. **RAV AntiVirus for Mail Servers** will scan these differently configured groups according to their specified scanning settings.
- *Antispam:* Using the bulk-mail module available in **RAV Engine** starting with version 8.9, **RAV AntiVirus for Mail Servers** can act as a customisable antispam program, blocking incoming spam and mail messages from certain addresses, according to the settings made by the server's administrator. Features like **Realtime Blackhole List** and **White/Black List**, available since **ravmd** 8.3.3, help you configure the bulk-mail module according to your needs and considerably reduce your efforts of fighting the spam. For more information, please read the Antispam Definitions section in this *User Guide*.
- *Information leaks pre-empted:* **RAV AntiVirus for Mail Servers** restricts the mail flow according to defined parameters/patterns. You can configure specific groups (for example one group named Accounting, including all the computers from your company's accounting department) and set **RAV AntiVirus for Mail Servers** to deny all outgoing mail messages containing certain attachment types or confidential informantion, according to the patterns set by your mail server's administrator.
- *Warning mails:* You can configure **RAV AntiVirus for Mail Servers** to send instantly warning mails when a virus allert occurs to the sender of the message, to the receiver and/or to a third party (i.e. RAV Research Team or the server's administrator).
- *Intelligent Update:* The update process can be performed on demand or on a scheduled basis, according to the administrator's settings. The latest versions of **RAV AntiVirus for Mail Servers** (including engine updates and documentation) can be found on the following ftp site: ftp://ftp.ravantivirus.com/pub/rav/. Mirror sites for **RAV AntiVirus** products and updates are available all over the world. A complete and updated list of these mirror sites can be found at the following address: http://www.ravantivirus.com/kb/viewarticle.php?ano=1283. Starting with version 8.3.3, the updates for **RAV AntiVirus for Mail Servers** are executed via **ftp** and **http** (with and without proxy) using **ravupdate**. This utility allows "on the fly" update from mirrors, guarantees the integrity of the downloaded files and is self-updateable. For more details, please refer to the Update section of this *User Guide*.

Software requirements

RAV AntiVirus for Mail Servers has been tested on the following flavours of Linux: Slackware 8.0, Mandrake 7.2, SuSE 6.4, RedHat 6.2, e-Smith (SME) and Debian Linux. The Linux kernel version (for the Linux flavours) should be 2.2 or later and the **zlib** version must be 1.1.3 or later.

Fully functional installation kits for some MTAs are also provided for the following operating systems: Free BSD (version 4.1 or later), Open BSD (version 2.8, 2.9 and 3.x), Net BSD (version 1.5 or later), Solaris 8 (i386 and SPARC), Unixware 7.1.1, BSDi and Win32.

For Win32 OSs, the requirements are as following: Windows 2000 with Service Pack 2 or Windows NT 4 with Service Pack 4.

For **RAV AntiVirus for Mail Servers** running on MacOS X, the software requirements are: Mac OS X version 10.1.1 or higher.

For **RAV AntiVirus for Mail Servers** running on BSD's, the software requirements are: BSD/OS version 4.3 or higher.

RAV AntiVirus for Mail Servers has been comprehensively tested on the following MTAs:

- CommuniGate Pro version 3.4b1 or later.
- Courier version 0.38.0 or later.
- DMail version 3.0 or later.
- Exim version 3.33 or later.
- Postfix version 20000531 or later.
- Qmail version 1.03 or later.
- Sendmail version 8.11 or later (for libmilter version only).
- Sendmail (any version).

Hardware requirements

RAV AntiVirus for Mail Servers will work on a computer meeting the minimal requirements for the installed Mail Server program.

For **RAV AntiVirus for Mail Servers** products running on Intel-based systems, this means:

Processor:	Compatible Intel CPU, 150 MHz or better
Memory:	32 MB of RAM or more.

For **RAV AntiVirus for Mail Servers** products running on sparc platforms, the hardware requirements are:

Processor:	SPARC V8 or later
Memory:	32 MB of RAM or more.

For **RAV AntiVirus for Mail Servers** products running on MacOS X, the hardware requirements are:

Processor:	powerpc (G3 or higher recommended)
Memory:	32 MB of RAM or more.

For **RAV AntiVirus for Mail Servers** products running on **s390** platforms, the hardware requirements are:

Processor:	s390
Memory:	32 MB of RAM or more.

Note: In order to send warning messages, according to the settings made in your scanning configuration files, you must have a MTA running on the local machine and listening on port 25.

Registration procedure

Due to an extremely flexible licensing system, you can acquire different packages, depending on your needs of protection. **RAV AntiVirus for Mail Servers** is licensed *per domain*. The more domains you protect with **RAV AntiVirus for Mail Servers**, the less you pay per domain.

All the products included in **RAV AntiVirus** family are available under a license scheme with three different stages: *evaluation*, *registration* and *activation*. Each different stage has its own characteristics, described below.

Evaluation

The products included in **RAV AntiVirus** family are fully functional and their users benefit of complete update services and technical support for an *evaluation period* of 30 days. During this evaluation period, our potential customers should be able to evaluate all the functionalities and services provided by our products, in order to make a knowingly decision. For details regarding your rights and obligations pertaining to the usage of GeCAD Software's products during the evaluation phase, please read the *Evaluation license* section from the License Agreement.

During the evaluation period, each mail message scanned with a **RAV AntiVirus** product contains info about the number of days remaining for evaluation. After this evaluation period, the product expires. If you do not introduce a valid *Registration Code* during the evaluation period, you will not be able to use the product anymore. Introducing (anytime) a valid *Registration Code* extends *ad infinitum* the lifetime of the product.

RAV AntiVirus for Mail Servers can be used *free of charge* for *two domains* for an **evaluation period** of 30 days. During this evaluation period the product is **fully functional** and you can **update** free of charge its signatures database.

Registration

If you do not register your product within 30 days, you will no longer be able to use it for scanning your mail traffic (non even for the two domains you were protected in the evaluation period). In order to register your **RAV AntiVirus for Mail Servers**, you have to purchase it from an authorized RAV reseller/distributor. When you purchase **RAV AntiVirus for Mail Servers** from an authorized RAV reseller/distributor, you receive a *Registration Code*. If the purchasing involves physical delivery, the *License Certificate* will also be available. After registering your product, you have to *activate* it by installing an *Activation key* (please refer to the next section to see how you can do it). Activating your registered product is very important, because it offers you *free* updates, as well as technical support for *one year*.

Activation

The activation process is done free of charge for all **RAV AntiVirus** products, *upon request*, by visiting https://register.ravantivirus.com and filling in your End User information (or, you can fax this info to the number specified on the License Certificate). Subsequently, you will receive by e-mail an *Activation Key* and instructions for installation it. Installing this Activation Key enables you to use **RAV AntiVirus for Mail Servers** for the number of domains you have purchased the product for and offers you the advantage of the following *integrated services*:

- Free engine upgrades for one year;
- Free daily updates for one year;
- Full technical support for one year;
- Free virus alerts and security advisories.

You can extend the rights resulted from activating your product by purchasing annual **update extensions** available at special discounts.

Updates

Given the present rate of appearance of new viruses, an antivirus program becomes obsolete in a few weeks (sometimes even days). In order for any antivirus product (**RAV AntiVirus for Mail Servers** included) to insure an efficient protection, you must be periodically *update* its virus signatures database.

Our developing team is updating the signatures database of RAV Engine on a daily basis. The list with the latest virus additions to the signatures database of RAV Engine can be found at the following address: http://www.ravantivirus.com/pages/dldupdate.php?type=Daily.

As for the latest versions of **RAV AntiVirus** products, you can download them from the following ftp site: ftp://ftp.ravantivirus.com/pub/rav/.

Mirror sites for **RAV AntiVirus** products and updates are available all over the world. A complete and updated list of these mirror sites can be found in the following Knowledge Base article: http://www.ravantivirus.com/kb/viewarticle.php?ano=1283.

USER GUIDE

Part IV: Configuration files and man pages

In the following section you will find:

- The configuration file for **RAV AntiVirus for Mail Servers** (**ravmd.conf**);
- The **man** page for RAV mail scanning daemon (**ravmd**);
- The **man** page for **RAV AntiVirus** command line version (**ravav**);
- The **man** page for **ravupdate**;
- The **man** pages for the external filters for the MTAs supported by **RAV AntiVirus for Mail Servers**:
  - ✓ **ravcgate** – RAV external filter for CommuniGate Pro;
  - ✓ **ravcourier** – RAV external filter for Courier;
  - ✓ **ravdmail** – RAV external filter for DMail;
  - ✓ **ravexim** – RAV external filter for Exim;
  - ✓ **ravpostfix** – RAV external filter for Postfix;
  - ✓ **ravqmail** – RAV external filter for Qmail;
  - ✓ **ravsendmail** – RAV external filter for Sendmail;
  - ✓ **RAVMilter** – RAV external filter for Sendmail-Milter.

These files are not meant to represent an exclusive documentation for **RAV AntiVirus for Mail Servers**, as additional documentation might also be found:

- In the *tar.gz* files containing the installation kit for the product you are using. Here you can find the *ReadMe, Install* and *Uninstall* files providing valuable information for the distinct operating system and MTA you are using.
- In the **Knowledge Base** available on the manufacturer's website (http://www.ravantivirus.com/kb/). Here you can find additional information (i.e. Frequently Asked Questions or the latest product updates), as well as useful links to product documentation and other information regarding our products.

USER GUIDE

RAVMD configuration file

NAME

ravmd.conf - the configuration file for **ravmd** daemon

SYNOPSIS

This is the configuration file for **ravmd** daemon, ravmd.conf, and it contains info on the run-time configuration for **RAV AntiVirus** mail-scanning daemon. After installation, ravmd.conf resides in your ${ETCDIR} directory.

Other documents containing valuable information are available:

- The *Install*, *UnInstall* and *ReadMe* files included in the tar or tar.gz files containing the setup programs;
- The configuration manuals for **ravmd** filter clients included in the *User's Guide for Mail Servers* and in the tar or tar.gz files containing the setup programs.

Structure

This configuration file consists of:

- Description of four declaration sections (the *Regular Expression Declaration* section, the *Action Definitions* section, the *Warning Mails Message Declarations* section and the *Antispam definition*s section),
- Group declarations, and
- Explanation of possible parameters.

The info included in this part of the documentation is for reference purposes. Other valuable sources of information are also available. Information pertaining to the installing and uninstalling processes, for instance, is included in the *Install* and *Uninstall* files provided in the *tar.gz* files containing the installation kit for the product you are using. Additional information about **RAV AntiVirus for Mail Servers** (hardware and software requirements, list of installed files, instructions for configuration and updating) is provided in the *ReadMe* file, included in the installation kit.

When presenting the possible parameters in **ravmd**, besides the default values and examples for these parameters *Frequently Asked Questions* are also provided, to help you better understand the functions of **ravmd** and know all the options available in it.

For the users of previous version of **RAV AntiVirus for Mail Servers**, please read the **What is new in ravmd 8.4.1** section below.

Macros

Strings proceeded by the $ character (i.e. ${BINDIR}) are used as *macros* denoting paths that are specific to the operating system you are using.

These macros have the following meaning:

${BINDIR} - location of RAV executables;

${LIBDIR} - location of RAV libraries;

${ETCDIR} - location of RAV configuration files;

${DATADIR} - location of RAV logs, temporary files, quarantine folder, activation key, etc.;

${RAVEDIR} - location of RAV Engine.

The corresponding paths should replace these macros as follows:

For Linux and Solaris:

${BINDIR} = /opt/rav/bin

${LIBDIR} = /opt/rav/lib

${ETCDIR} = /etc/opt/rav

${DATADIR} = /var/opt/rav

${RAVEDIR} = /var/opt/rav/rave for products running on i386 platforms, /var/opt/rav/s390rave for products running Linux on s390 platforms, /var/opt/rav/spc_rave for products running on sparc platforms and /var/opt/rav/ppc_rave for products running Linux on PowerPC platforms.

For FreeBSD, NetBSD and BSDi:

${BINDIR} = /usr/local/bin

${LIBDIR} = /usr/local/lib/rav

${ETCDIR} = /usr/local/etc/rav

${DATADIR} = /var/rav

${RAVEDIR} = /var/rav/rave for products running on i386 platforms.

For OpenBSD:

${BINDIR} = /usr/local/bin

${LIBDIR} = /usr/local/lib/rav

${ETCDIR} = /etc/rav

${DATADIR} = /var/rav

${RAVEDIR} = /var/rav/rave for products running on i386 platforms.

For MacOS X:

${BINDIR} = /usr/local/rav/bin

${LIBDIR} = /usr/local /rav/lib

${ETCDIR} = /usr/local/rav/etc

${DATADIR} = /usr/local/rav

${RAVEDIR} = /usr/local/rav/ppc_rave.

What is new in ravmd 8.4.1

Version 8.4.1 of **ravmd** includes the following new features:

- warn_domains: new flag for warn_sender, warn_receivers and warn_admin; when using warn_domains, only the users from the domains specified by the 'domain' parameter are notified;
- wbl_discard: new action for mails matching a rule in **WBL**. When using this parameter, the corresponding mails are discarded (rejected with no bounce back to the sender, saving therefore valuable bandwidth for users);
- **forward**: new action for bulk mails. The bulk mails are forwarded to the mail addresses specified by the antispam 'forward_to' parameter;
- forward_to: new parameter for the antispam section; contains a list of mail addresses where the spam mail is forwarded;
- **new log levels**:
    1. **+ 2048** -> log actions performed for bulk mails
    2. **+ 4096** -> log all the IPs from **'Received:'** mail header field
    3. **+ 8192** -> log the rule matched by content filter.
- The default location of RAV directories may be now changed.
- The **_include** directive now supports paths relative to the current file.
- The directory structure for **RAV AntiVirus** products running on BSDs has been changed in order to comply with FreeBSD's hierarchy recommendations.

For more information, read the *Release Notes* for **RAV AntiVirus for Mail Servers** version 8.4.1, available **here**.

What was new in ravmd 8.4.0

The main enhancement brought by **ravmd** version 8.4.0 is the integration of the antispam module. The antispam module is actually a combination between the new bulk mail module and features already implemented in **ravmd**, i.e. **Real-time Blackhole List (RBL)** and the **White/Black List (WBL).** Correctly configured, this combination should be a winner in the fight against unsolicited mails.

Note: You can find more details on the new features of **ravmd** version 8.4.0 in the *Release Notes for ravmd 8.4.0* and in the *User Guide for RAV AntiVirus for Mail Servers* (version 1.41 or later of this document). You can find these documents on **http://www.ravantivirus.com/support/documentation.php**.

The new antispam module included in **ravmd** version 8.4.0 triggers important changes in this document.

- A new section called *Antispam definitions was* added after the *Warning Mails Message declaration* section, explaining how the new antispam module works.
- The parameters specific to the antispam module are detailed in the *Antispam parameters* sub-section under the *Explaining the parameters* section.
- New actions are available for bulk mails: save, embed, add_header, add_subject, deliver, reject, discard.
- New group-specific parameter: **antispam_configuration**.

Among other changes to be noted in **ravmd** version 8.4.0:

- the folder structure for **ravmd** has changed. For instance, ravmd.conf and actions files are to be found in your ${ETCDIR} folder, instead of the older /usr/local/rav8/etc location (under Linux). The file antispam containing the settings for the antispam module is to be found in the same folder.
- the format (font, paragraph) of this document has changed since its previous version.

Definitions

Some concepts frequently used in the programming world might have different understandings for the purpose of this manual. Here you can find these terms and the meanings they are given in this document:

- A **variable** is a place where we can store data;
- A **string** is a sequence of characters ending with a new line or delimited by quotes;
- A **boolean** is one of the keywords: **yes/no**;
- An **enumeration** is a sequence of words separated by commas;

Note: The spaces are ignored by **ravmd**, except for **WBL**, where spaces are accepted instead of commas.

- A **regexp** is a POSIX regular expression.
- A **group** is a category of users (senders or receivers) that have different mail addresses and/or domains, but share the same action parameters for **ravmd**.
- A **macro** is a stored template of instructions to be replaced with actual values by **ravmd**;
- A **commented** line is a line beginning with a hash (#) character. All commented lines are ignored. All the lines containing only white spaces are also ignored;
- A **default** is a predefined value for one parameter. If that **parameter** is missing from ravmd.conf then it is considered to have that **default** value.

The values following the '=' sign in *parameters* may be: a **string**, a **boolean**, a **regexp** or an **enumeration**.

Note: The section and parameter names are **not** case sensitive.

- An *object*, for the purpose of this *User Guide*, represents any type of file (archive, executable, .dll, etc.), a folder, a disk sector, the boot sector of a hard disk, the memory or any other hardware component that can be scanned by **ravmd**.

- An object is classified as *infected* when **ravmd** has detected a virus in that object (i.e. the virus signature is included in the signature database of **ravmd**).
- An object is classified as *suspicious* when is contains potentially dangerous code, but this code does not match to any virus in the current signature database of **ravmd**. This might be the case of a new virus or a new variant of a virus already included in the signature database of **ravmd**.
- An object is classified as *clean* if **ravmd** identifies no virus or suspicious code when scanning that object.
- An object is classified as *cleaned* when **ravmd** has identified a virus/suspicious code while scanning that object, but the program was able to disinfect it.
- An object is classified as *uncleaned* when **ravmd** has identified a virus/suspicious code while scanning that object, but the program was not able to disinfect it.

SECTION DESCRIPTIONS

Four different sections are included in ravmd.conf: the *Regular Expression Declarations* section, the *Action Definitions* section, the *Warning Mails Message Declarations* section and the *Antispam Configuration* section. These sections are presented below in the following format:

- Short description;
- Keyword representing the beginning of the section;
- Syntax;
- Example.

Some *Frequently Asked Questions* (FAQs) are also provided in connection with some relevant aspects of these sections. The *Frequently Asked Questions* are meant to help you with the practical aspects of using **RAV AntiVirus for Mail Servers**.

The *Frequently Asked Questions* were selected from the questions asked by users of **RAV AntiVirus for Mail Servers** on the mailing lists available for our products.

For more information, you can subscribe to these discussion lists - see the **corresponding** section in this *User Guide*.

Regular Expression Declaration section

In the *Regular Expression Declaration* section you can define all the regular expressions you will use for the content filtering feature. This section can appear anywhere in the configuration file, as long as it is placed before the group definitions.

The **Regular Expression Declaration** section begins with the following keyword:

```
_define_regular_expressions
```

Syntax

variable = string

or

variable = regexp

Example 1:

```
for_subject_filter = I love you
```

This regular expression defines a filter for all the mails including the string “I love you” in the **Subject** field.

Example 2:

```
file_regexp = .*\.exe
```

This regular expression defines a filter for all mail messages having **.exe** attachments.

Action Definitions section

In the *Action Definitions* section you can define the actions you want to be used by **ravmd,** depending on the file status (for more information, please refer to the Definitions section of this document). The *Action Definitions* section can appear anywhere in the configuration file as long as it is placed before group definitions.

This section starts with the keyword: _define_actions.

Syntax

variable = enumeration

Depending on the scanning status of the mail message (infected, suspicious, subject/attachment/content filter match), the variable will be associated with some different actions (*clean, move, copy, delete, rename, ignore, reject, discard*). The enumeration contains one or multiple actions separated by a comma. The actions from this enumeration are executed by **ravmd** in the order you specify.

Depending on the scanning status, the following valid actions are supported:

- for infected files: **clean**, **move**, **copy**, **delete**, **rename**, **ignore**, **reject**, **discard**.
- *for suspicious files*: **move**, **copy**, **delete**, **rename**, **ignore**, **reject**, **discard**.
- *for mails matching the subject filter*: **copy**, **ignore**, **reject**, **discard**.
- *for files matching the attachment filter*: **move**, **copy**, **delete**, **rename**, **ignore**, **reject**, **discard**.
- *for mails matching the content filter*: **move**, **copy**, **delete**, **ignore**, **reject**, **discard**.
- *for mails tagged as spam:* **save**, **embed**, **add_header**, **add_subject**, **deliver**, **reject**, **discard**.

Note 1: If the last action you define for infected mails is not one of the following: **Discard, Reject** or **Ignore**, the **Reject** action is automatically applied.

Note 2: If the last action you define for bulk mails is not one of the following: **Deliver, Reject** or **Discard**, the **Deliver** action is automatically applied.

For more information, please refer to the actions file included in your setup program.

The following table includes a description of all the actions available in **ravmd** (first column), a description of these actions (second column) and a listing of circumstances when each specific action is available (third column), depending on the scanning status:

Action	Description	Available for objects with status:
Clean	Ask **ravmd** to clean the infected file.	Infect
Move	Ask **ravmd** to move the file to quarantine (equivalent to Copy + Delete actions).	Infect, suspicious, attach match, content match
Copy	**ravmd** will copy the infected object to quarantine.	Infect, suspicious, subject match, attach match, content match
Delete	**ravmd** will delete the infected object and replace it with a new file automatically generated. The file's name is warn.txt and this file is customisable (for more details please refer to FAQ 3). Note that **ravmd** doesn't change the mail file size because some protocols (like IMAP) may request the mail size first and then the mail body. So, the warn.txt file will be filled with spaces to fit the original file length.	Infect, suspicious, attach match, content match
Rename	The file will be renamed using the rename_ext extension specified in the configuration file.	Infect, suspicious, attach match
Ignore	The file is ignored, no action is taken and the e-mail is delivered.	Infect, suspicious, subject match, attach match, content match
Reject	The e-mail is rejected; it will not be delivered to any of its recipients, but will be bounced back to the sender.	Infect, suspicious, subject filter, attach match, content match, bulk mail
Discard	The e-mail is discarded; it will not be delivered to any of its recipients and will not be bounced back to the sender.	Infect, suspicious, subject filter, attach match, content match, bulk mail
Deliver	The original mail is delivered to its recipients even though it is tagged as Spam.	Bulk mail
Save	The bulk mail is saved in the Quarantine directory.	Bulk mail
Embed	Creates an embedded mail including a custom message and the bulk mail as attachment.	Bulk mail
Forward	New action available from version 8.4.1. The bulk mail tagged as Spam is forwarded to the mail addresses specified by the antispam forward_to parameter.	Bulk mail
add_header	Add a custom extra header to the bulk mail tagged as Spam.	Bulk mail
add_subject	Affix a custom string in the **Subject** field of a bulk mail tagged as Spam.	Bulk mail

Table 1: *Actions available in* ***ravmd.***

The following *Frequently Asked Questions* will help you better understand the characteristics of the actions available in **ravmd**.

FAQ 1: Scanning existing mails

Question: I just installed **RAV AntiVirus for Mail Servers**. How can I scan mail messages existing prior to this installation?

Answer: If you wish to scan mail messages existing prior to the installation of **ravmd**, do the following:

```
${BINDIR}/ravav -AM --smart --report=/tmp/ravreport.txt [path to mail accounts]
```

This setting results in scanning a mailbox (with **Ignore** as default action) and delivering a report (ravreport.txt) in the tmp directory.

FAQ 2: Separate domain file

Question: Is it possible to put all domains to be scanned in a separate hash or normal file?

Answer: Create a domains file in ${ETCDIR} and operate the following changes:

In ravmd.conf, replace the “domains to scan (separate them with ',')” section with:

```
domain1.com, domain2.com, domain3.net, domain4.com, domain5.org
```

Then use:

```
domain = _include ${ETCDIR}/domains.list
```

FAQ 3: Changing the contents of the warn.txt file

Question: Recipients who get a virus-infected email have their attachments replaced with a warning message set in the warn.txt file. How can I change the contents of this warn.txt file?

Answer: Please edit ${ETCDIR}/languages/english and customize the value of:

```
warn_txt_msg_english = "Your message".
```

Then restart **ravmd** with:

```
kill -HUP `cat ${DATADIR}/run/ravmd.pid`.
```

Please note that warn.txt has exactly the size of the deleted attachment and in some cases, because of the small size of the attachment, you will not be able to view your complete customized message.

FAQ 4: Modified message is not appearing in the warn.txt file

Question: I have modified the warn.txt message in my configuration but the modified message is not appearing in the warn.txt file. Why is that happening?

Answer: Either you did not correctly change the warn.txt message or the infected attachment file is to small to allow the entire warn.txt message to be displayed (see the answer to **FAQ 3** for more details). The steps to be followed are:

- In ${ETCDIR}/languages/english use: warn_txt_msg_english = "Your message here"
- In ${ETCDIR}/languages/english.equiv use: warn_txt_msg = warn_txt_msg_english
- Then restart ravmd with: kill -HUP `cat ${DATADIR}/run/ravmd.pid`

Warning Mails Message Declarations section

In the *Warning Mails Message Declarations* section you can define the subjects and the messages for the warning mails that will be sent to those interested. The *Warning Mails Message Declarations* section can be declared anywhere in the configuration file as long as it is placed before the group definitions.

This section starts with the keyword:

_define_strings

Syntax

variable = string

The string defining one warning mail should give the user some basic information such as: what file has caused the warning, who sent that file and whom was it intended for, what is the warning about, what action was taken by **ravmd** and so on. One example of good warning message would be the following:

"*That* file coming from *that* sender and addressed to *this* user is infected with *this* virus. The action taken by **ravmd** was *this*."

Of course, not all the warning mails are about virus-infected files. There are some other situations when you might want to be alerted by **ravmd**. For instance, you might want **ravmd** to alert you when a mail containing one specific type of attachment has arrived on your mail server or when one of your users is trying to transmit a confidential document. Of course, in these cases the warning mail should change accordingly to that specific situation. However, in all the cases some information is *always* included (the name of the file causing the alert, the sender, the action, etc.).

Note: Please note that a warning mail is also *automatically* sent to all the mail addresses specified in the admin_addr parameters from *all* groups:

- in case a **ravmd** malfunction is recorded; or

- with 14 days before your license will expire; or

- on each **ravmd** reload in the last 14 days before your license expires, until you extend your activation period.

This information always included in a warning mail is based on *macros*. One macro is (for the purpose of this document) a stored template of instructions containing one piece on info from the string representing the warning mail. FILE_NAME, for instance, is an example of macro containing the name of the file generating the warning mail. **ravmd** will replace this macro with the actual name of the trouble-making file. VIRUS_NAME, on the other hand, is a macro containing the name of the virus generating the warning mail. **ravmd** will replace this macro with the actual name of the virus.

The string that the warning message will be created from can contain the following macros:

FILE_NAME	The full path to the scanned file and its name.
ATTACH_NAME	The name of the scanned attachment.
VIRUS_NAME	The name of the virus discovered by **ravmd**.
FROM_USER	The mail address of the sender.
ON_HOST	The host **ravmd** is running on.
TO_USER(S)	The mail addresses of the receivers.
SUBJECT	The mail's subject.
QUARANTINE_NAME	The name of the file saved to the Quarantine folder using the *Move* or *Copy* action.
SAVED_FILE_NAME	The name of the mail file saved to quarantine when save_infected=yes and/or save_suspicious=yes.
HEADER_RECEIVED	Macro replaced with the Received: lines in the received mail's header (if this information exists). This helps you finding the infected machine more easily.
HEADER	This macro is replaced with the entire received mail's header.

These macros are combined in one warning string that might look like this:

"The file ATTACH_NAME attached to mail (with subject:SUBJECT) sent by FROM_USER to TO_USER(S)is infected with virus: VIRUS_NAME".

Note: The macros **FROM_USER** and **VIRUS_NAME** can be used in the warning mail's subject too.

In this case, one attachment file is virus-infected. Info is provided about the attachment's name, the subject of the mail containing the infected attachment (this is an optional info), the sender's name, the addressees' names and the virus name.

To eliminate any mystification, here are some lines about the differences between the most confusing two pairs of macros:

1. QUARANTINE_NAME *vs.* SAVED_FILE_NAME

QUARANTINE_NAME represents the name of the infected object saved to Quarantine as a result of using the *Move* or *Copy* action. The file is saved by **ravmd** in the Quarantine directory with the extension .qto. The files are encrypted, but starting with version 8.3.3 **ravav** can decrypt them.

SAVED_FILE_NAME represents the name of the infected object saved in the Quarantine folder as a result of using the parameters save_infected=yes and save_suspicious=yes. The file is saved by **ravmd** in the Quarantine directory in the **UNIXTIME-RAV{PID_OF_RAV_FILTER}** format, where RAV_FILTER is ravexim, ravpostfix, etc. For sendmail, the file is saved in the **UNIXTIME-df{MESSAGE-ID}** format, and for sendmail-milter the format is **UNIXTIME-RAV{MESSAGE-ID}**.

2. HEADER_RECEIVED *vs.* HEADER

The HEADER macro is replaced with the entire mail header, while HEADER_RECEIVED is replaced only by the lines beginning with "**Received:**". Therefore, the lines *Message-Id*, *X-Sender* and *X-Mailer*, for instance, are only included in the HEADER macro is used, but not if the HEADER_RECEIVED macro is used.

The following *Frequently Asked Questions* will hopefully help you better understanding this very interesting feature of **ravmd**.

FAQ 5: Warning messages not sent

Question: Why am I no receiving the warning messages when viruses are found?

Answer: Most probably you did not correctly configure the **ravms** mail account. Here are the excerpts from the documentation that should help you:

"Default values:

ravms_name = ravms

on_host = the official name returned by the gethostbyname() function

smtp_server = same as host (IP address)

smtp_port = 25

ravms_full_name = displayed.name (RFC822)

Default values are provided and they will probably work. Define these fields only if warning mails are sent when a virus is found or if you want to use a different account instead of **ravms**. Specify **smtp_server** IP address only if that machine is behind a firewall and **ravmd** can't get its host name".

FAQ 6: Omitting the SUBJECT from warning mail

Question: Is it possible to define that SUBJECT should be omitted from the warning for specific viruses? Some of the viruses disclose potentially sensitive information from the victim's hard drive, and puts it in the subject of the email.

Answer: In ${ETCDIR}/languages/your_language edit the following line:

infected_m_english = "The file ATTACH_NAME attached to mail (with subject:SUBJECT) sent by FROM_USER to TO_USER(S)is infected with virus: VIRUS_NAME."

and remove "with subject: SUBJECT".

The subject will not be displayed anymore in your warning mails. Please note that this solution will be applied to all mails, not just for specific viruses.

FAQ 7: Changing the warning message in case of attachment match

Question: When a mail with .exe, .com or other attachments of this type is sent, a warning message is also sent, which is OK, but it says the file is infected with the virus: UNAUTHORIZED_MAIL_ATTACHMENT, which seems to scare the average user. Can the message be modified?

Answer: Yes, the message can be modified:

- In the ${ETCDIR}/languages/your_language file define the variable: infected_m_attach_english = "The file ATTACH_NAME attached to mail (with subject:SUBJECT) sent by FROM_USER to TO_USER(S) has an unauthorized file extension."
- In section _attachment_filter_warning_messages of ${ETCDIR}/languages/your_language.equiv file use: infected_msg=infected_m_attach_english
- Finally, restart ravmd with: kill -HUP `cat ${DATADIR}/run/ravmd.pid`

The same procedure can be applied for UNAUTHORIZED_MAIL_SUBJECT and UNAUTHORIZED_MAIL_CONTENT warning messages, making the proper adjustments, as described in FAQ 8 and FAQ 9 below.

FAQ 8: Changing the warning message in case of subject match

Question: How can I change the warning message sent by **ravmd** in case of subject match?

Answer: Here is how you can do it:

- In the ${ETCDIR}/languages/your_language file define the variable: infected_m_subject_english = "The mail with subject:SUBJECT sent by FROM_USER to TO_USER(S) has an unauthorized subject."
- In the _subject_filter_warning_messages section of ${ETCDIR}/languages/english.equiv use: infected_msg=infected_m_subject_english
- Restart ravmd with: kill -HUP `cat ${DATADIR}/run/ravmd.pid` and you're done.

FAQ 9: Changing the warning message in case of message's body content match

Question: How can I change the warning message sent by **ravmd** in case of content match?

Answer: In ${ETCDIR}/languages/your_language define the variable:

infected_m_content_english = "The mail with subject:SUBJECT sent by FROM_USER to TO_USER(S) has an unauthorized content."

- In the content_filter_warning_messages section of ${ETCDIR}/languages/english.equiv use: infected_msg=infected_m_content_english
- Restart **ravmd** with: kill -HUP `cat ${DATADIR}/run/ravmd.pid`

FAQ 10: Offering information about viruses in the warning mails

Question: How can I add a link to a web page where users can easily find the information regarding the virus generating a warning mail?

Answer: Add the following link in your ${ETCDIR}/languages/<your_language_file> file in the message for infected files:

http://www.ravantivirus.com/virus/by-keyword.php?k=$VIRUS_NAME&sourceid=WM

Now, for every infected file in the warning mail you will receive the direct link for the viruses that can be found in our Virus Encyclopedia. If the virus generating the warning mail cannot be found, the link will return the main page of the Virus Encyclopedia.

FAQ 11: Stopping update notifications

Question: How do I stop update notifications?

Answer: In order to stop the update notifications, in ${BINDIR}/ravmdupdate.sh change:

```
#Specify when should the administrator be notified by the update process

#VERBOSE="silent"

VERBOSE="noisy"

#VERBOSE="errors"
```

with:

```
#Specify when should the administrator be notified by the update process

#VERBOSE="silent"

#VERBOSE="noisy"

VERBOSE="errors"
```

or with:

```
#Specify when should the administrator be notified by the update process

VERBOSE="silent"

#VERBOSE="noisy"

#VERBOSE="errors"
```

Antispam Definitions section

The **Antispam** module is available in **RAV AntiVirus for Mail Servers** starting with version 8.4.0. This feature is designed to protect the users of unsolicited mail messages.

The parameters pertaining to the antispam module of **RAV AntiVirus for Mail Servers** are described in the Antispam parameters sub-section of this document.

The Antispam functionality is based on the bulk mail module available in RAV Engine version 8.9 or later. This module is working in close co-operation with older features like **Real-time Blackhole List** (RBL) or **White-Black List** (WBL), available in **ravmd** since version 8.3.3.

How does it work

When a mail message reaches a RAV-protected mail server, it is first confronted with the **White/Black List (WBL)**. This is a static configurable list that any system administrator can use for specifying the mail addresses from which he wants to automatically *accept* messages (**Static White List**) or the mail addresses from which he wants to automatically *reject* or *discard* messages (**Static Black List**).

If the mail just received by the RAV-protected mail server comes from an address found in the **Static White List**, then the search in the **RBL** is not executed anymore and **ravmd** jumps directly to the scanning process for the respective mail. Also, the antispam module is not used for the mail coming from addresses found in the **Static White List**. If the mail just received by the RAV-protected mail server comes from an address in the **Static Black List**, the mail is automatically *rejected* or *discarded* (according to the specified settings).

If the address is not found in the **White/Black List (WBL)**, the mail is confronted against the **Real-time Blackhole List (RBL)**. This is a dynamic list (rbl_site) with sites containing listings of known spammers. If any of the IP addresses from the mail's header is listed on one of the websites defined in the rbl_site, the mail is automatically rejected. If no IP address from the mail's header is found in the rbl_site list or the use_rbl parameter is set to **No**, **ravmd** jumps to the scanning process for the respective mail. The system administrator can of course choose not to use these **WBL** and **RBL** features. In this case, **ravmd** scans directly the received messages, using the options defined for the corresponding groups.

Assuming the mail is passing OK through the virus-scanning process (i.e. the message is clean or **ravmd** has cleaned it), the antispam search is executed. **ravmd** is looking for patterns known to be specific to spammers on the **Header** and **Body** levels of the mail message. **ravmd** applies the same antispam criteria (about 500, at this writing) for each mail message confronted with the antispam module. Depending on its specifics, the message receives a number of points and is tagged as **Spam** or **No spam** message. Depending on the number of points they receive, the mail messages *tagged as spam* are classified in one of the following *accuracy levels*: **Low**, **Medium**, **High** and **Very High**.

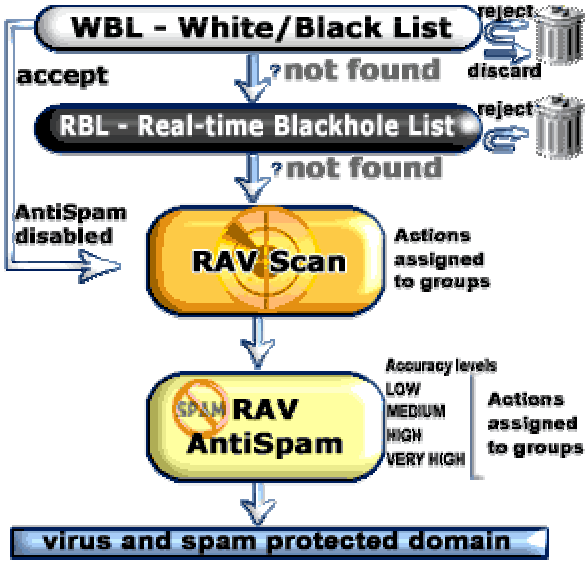
A „low" accuracy level means that **ravmd** reports the suspected mail message as spam even if only few spam patterns exist. This means that you might get some „false alarms", but no spam messages will pass by **ravmd**.

A „medium" accuracy level means that **ravmd** reports the suspected mail message as spam if several spam patterns exist. This means that the number of „false alarms" is lower than in case of low accuracy spam, but several spam messages might pass by **ravmd**.

A „high" accuracy level means that **ravmd** reports the suspected mail message as spam if more spam patterns exist. This means that the number of „false alarms" is low, but some spam messages might pass by **ravmd**.

A "very high" accuracy level means that **ravmd** reports the suspected mail message as spam only if lots of spam patterns exist. Therefore, it is unlikely for **ravmd** to report false alarms, but more spam messages will probably pass by **ravmd**.

Below you can find a scheme detailing the flow described above.



For each of the four accuracy levels specified above you can configure different strings and separate actions to be used/taken by **ravmd**. As mentioned in the corresponding table, the actions specific to the Antispam module of **ravmd** are: **save, embed, add_header, add_subject, reject, discard, deliver, forward**. All these actions are documented below:

- **save** (the mail is saved in the **Quarantine** folder, for further analysis, before any other action is executed on the respective mail);

Note: The **Quarantine** folder for bulk mails is different than the **Quarantine** folder for suspicious files.

- **embed** (the mail tagged as spam is sent as embedded mail);

Note: When using this feature of **ravmd**, the messages tagged as spam are reinjected in the MTA queue using the following syntax:

`cat <modified_mail> | sendmail -i -f<sender> <receivers>`

(you must have 'sendmail' executable in your search path for commands - environment variable PATH).

If the sendmail binary is not corresponding to the binary of your MTA, then you should make the link manually in `/usr/sbin` (for example) by using (example for Qmail MTA):

`ln -sf /var/qmail/bin/sendmail /usr/sbin/sendmail`

This command assumes that you have the Qmail's binaries in `/var/qmail/bin`.

- **add_header** (a header is added to the mail tagged as spam);
- **add_subject** (a user-defined variable is affixed in the **Subject** field of the mail tagged as spam);
- **reject** (the mail tagged as spam is rejected);
- **discard** (the mail messages tagged as spam are discarded, i.e. rejected with no bounce back to the sender);

- **deliver** (the mail messages tagged as spam are delivered to their recipients);
- **forward** (the mail messages tagged as spam are forwarded to the addresses specified by the forward_to parameter).

A default configuration is included in the ${ETCDIR}/antispam file. Here you should define your rules and the actions to be taken (for each accuracy level), and then you should include in each group's configuration file the following parameter:
antispam_configuration = rule_name_1, rule_name_2, rule_name_3, rule_name_4

where rule_name_x is the rule name you defined in the **antispam** file.

Here is the checklist to be followed when using the antispam module of **ravmd**:

- define the name of the section, flanked by two "@" symbols (i.e. @bulk_detection_low@) in **ravmd.conf** (after the **Regular Expression Declarations**, **Action Definitions** and **Warning messages** sections and before the **Group configuration** section);
- Define the accuracy level. This should be one of the following four keywords: accuracy_low, accuracy_medium, accuracy_high, accuracy_very_high;
- define the strings that will be used by the extra_header, extra_subject and embedded_msg parameters;
- define the actions to be executed for each of the four bulk detection levels;
- define the path to the **Quarantine** folder where bulk mails are saved when using the **Save** action.

Important: If no action is defined for one specific accuracy level, **ravmd** will automatically assume the actions defined for the level having the immediate lower priority.

Here is one example for Linux:

```
@bulk_high_precision@

accuracy_high

extra_header = bulk_header_high_english

extra_subject = bulk_subject_high_english

embedded_msg = bulk_embedded_high_english

actions = bulk_actions_high

quarantine = ${DATADIR}/bulk
```

Then, in the groups you want to use the actions you just defined to mails tagged as spam with level accuracy "high", include the following line:

```
antispam_configuration = bulk_high_precision
```

For more details, please refer to the corresponding Antispam parameters sub-section of this document. The bulk_header_high_english, bulk_subject_high_english and bulk_embedded_high_english (and the other similar parameters) are to be defined in the selected language files (i.e. ${ETCDIR}/languages/english) and the bulk_actions_high parameter - in the _define_actions section of ravmd.conf or in the actions file.

Group Declarations

What is a group

A group is a category of users (senders or receivers) having different mail addresses and/or domains, but share the same configuration parameters for **ravmd**. Using the group feature of **ravmd**, you can use the same characteristics (for the scanning engine or the update process, for instance) and the same actions (filters, warning mails and so on) for users having different mail addresses and mail domains. This group structure is very useful in case you use **ravmd** in a network with hundreds of mailboxes.

In **ravmd** you have one default group, called [global], containing at the beginning all the users and mail domains protected by **ravmd**. When you define a new group, its members are taken away from the [global] group and included in the new group, for which you have to define new group-specific options.

Warning: Make sure when defining groups not to include the same user in different groups.

The [global] group

This is the default group, which contains all the users and mail domains that are not defined in the other groups. The [global] group MUST NOT contain any member declaration parameters.

Defining other groups

A new group definition begins with the group name written between square brackets "[ ]". The group definition must be followed by the member declarations (it is mandatory that the members are declared before any other parameters) and the group options.

THE _include DIRECTIVE

In order to keep the configuration file more readable you can use the **_include** directive to insert other files in the main one. This can be very useful if you have a large number of groups. Defining them on a single configuration file will make the future maintenance difficult. Instead of using a single large configuration file, you can split it in more small files.

If you want to add a new group called [mygroup], all you have to do is to append the following line to the main configuration file:

```
_include ${ETCDIR}/groups/mygroup_file
```

Then define the group in the mygroup configuration file:

```
[mygroup]
sender = user_1@domain.com
```

If you want to add another group called [yourgroup], append to the main configuration file:

```
_include ${ETCDIR}/groups/yourgroup_file
```

Then define that group in the yourgroup configuration file:

```
[yourgroup]
sender = user_2@domain.com
```

Note: You can use the **_include** directive to include as many groups you wish in the main configuration file. However, you should keep in mind that **ravmd** will apply for each mail only the rules defined for the first matched group using the **_include** directive. For instance, when analysing a mail with multiple recipients, one in mygroup and one in yourgroup, **ravmd** will apply the actions defined for the first matched group (mygroup in this case).

How do I configure groups

The configuration file must include the [global] group, containing the default options for all mail scanning processes. Besides the [global] group, you can customize **ravmd** by creating additional groups, with different configurations.

If no value is specified for one parameter in the configuration file for one group, **ravmd** will use the *default value* for that parameter. If no *default value* is defined, **ravmd** will use the value specified in the [global] group for that parameter, with the following exceptions:

filter_subject, filter_attachment, filter_content, warn_sender, warn_receivers, warn_admin, do_not_warn, do_not_show, admin_addr, do_not_scan, cf_do_not_scan_extensions, advertising_msg, wbl_reject, wbl_accept, wbl_discard, use_rbl, embed_clean_mail, embed_cleaned_mail, embed_unclean_mail, use_embedded_msg, use_embedded_warning, antispam_configuration.

How do I configure separate antispam options for my groups

If you intend to use the antispam feature of **ravmd**, you should specify what *antispam configuration* you want to use for the targeted groups. You do that using the antispam_configuration parameter, described in the Group-specific parameters section of this *User Guide*.

The following *Frequently Asked Questions* are providing the answers for some of the confusions of the existing users of **RAV AntiVirus for Mail Servers** in aspects pertaining to group configuration.

FAQ 12: Creating different rules for a domain

Question: How do I create different rules for a domain?

Answer: You can define different rules for a domain by creating a group in which you specify from_host and/or to_host. Then specify the actions that **ravmd** can perform for the newly created domain. Here are the steps you should follow for creating different rules for a domain under Linux, Solaris and MacOS X. For BSDs, the process is identical, except for the paths to the my_domain file:

- In the actions file use:
  act_for_my_domain = clean, delete, ..
- At the end of ravmd.conf define the group:
  [my_domain]
  _include ${ETCDIR}/groups/my_domain
- Create the ${ETCDIR}/groups/my_domain file and edit it:

```
#from_host=a.com
to_host=a.com
infected_actions=act_for_my_group
```

FAQ 13: Example on how to set the domains and the IP addresses

Question: I need an example on how to set the domains and the IP addresses.

Answer: In the [global] section of ravmd.conf use:

```
domain = localhost, your.host.com
```

In order to receive the warning mails, in the ${ETCDIR}/groups/global file use:

```
ravms_name = ravms
on_host = your.host.com
smtp_server = ip.address.of.host
ravms_full_name = displayed.name (RFC822)
```

FAQ 14: Global group configuration

Question: How is the [global] group configured?

Answer: Please define in the ${ETCDIR}/groups/global file the following options:

```
ravms_name=ravms
on_host=your.host.com
smtp_server=127.0.0.1 (IP address)
smtp_port=25
ravms_full_name = displayed.name (RFC822)
```

Then start **ravmd** with /etc/init.d/ravmail start for Linux, Solaris and MacOS X and with /usr/local/etc/rc.d/ravmail.sh for BSDs.

Note: In /etc/hosts you should have defined at least: 127.0.0.1 localhost.localdomain localhost

FAQ 15: Excluding one particular account

Question: I need to exclude one account in particular as I receive a daily email of over 60 MB in size and I don't want RAV to try to process that file. What do I get it done?

Answer: You can create a group with that sender and choose not to scan that mail. To do that, in ravmd.conf add at the end of the file:

```
[group1]
_include ${ETCDIR}/groups/group1
```

Then create the file ${ETCDIR}/groups/group1 and edit it:

```
sender=sender@host.com
do_not_scan=yes
```

Then restart ravmd with: kill -HUP `cat ${DATADIR}/run/ravmd.pid`

The Advanced Content Filtering feature

A common mail message is considered to have the following components: **Subject**, **Body** and **Attachments**. However, when talking about **ravmd**'s content filtering module, things are a little bit different. Specifically, the **Body** level consists of the mail's body and the attachments' contents, while the **Attachment** level is only represented by attachments' names.

What is the Advanced Content Filtering feature of ravmd

The **Advanced Content Filtering** is a very powerful feature of **ravmd** that can help you configure the product to answer your specific needs. Using this feature, you can define **filters** on the following levels:

- Subject
- Body
- Attachment name and
- Attachment contents.

You can afterwards define **specific actions** for the mail messages matching the rules you specify. For instance, you can instruct **ravmd** to deny incoming mail messages containing one specific string in the **Subject** field (i.e. "I love you"), deny outgoing mail messages containing user-specified strings (i.e. "confidential", "balance sheet") and deny incoming/outgoing mail containing attachment with user-specified file types/names.

How does it work

The *Content Filtering* module of **ravmd** is using:

- **POSIX regular expressions** for searches executed on the *Subject* and *Attachment* (attachment file names) levels;
- **User-defined strings** for searches executed on the *Body* level - message's body and the attachments contents.

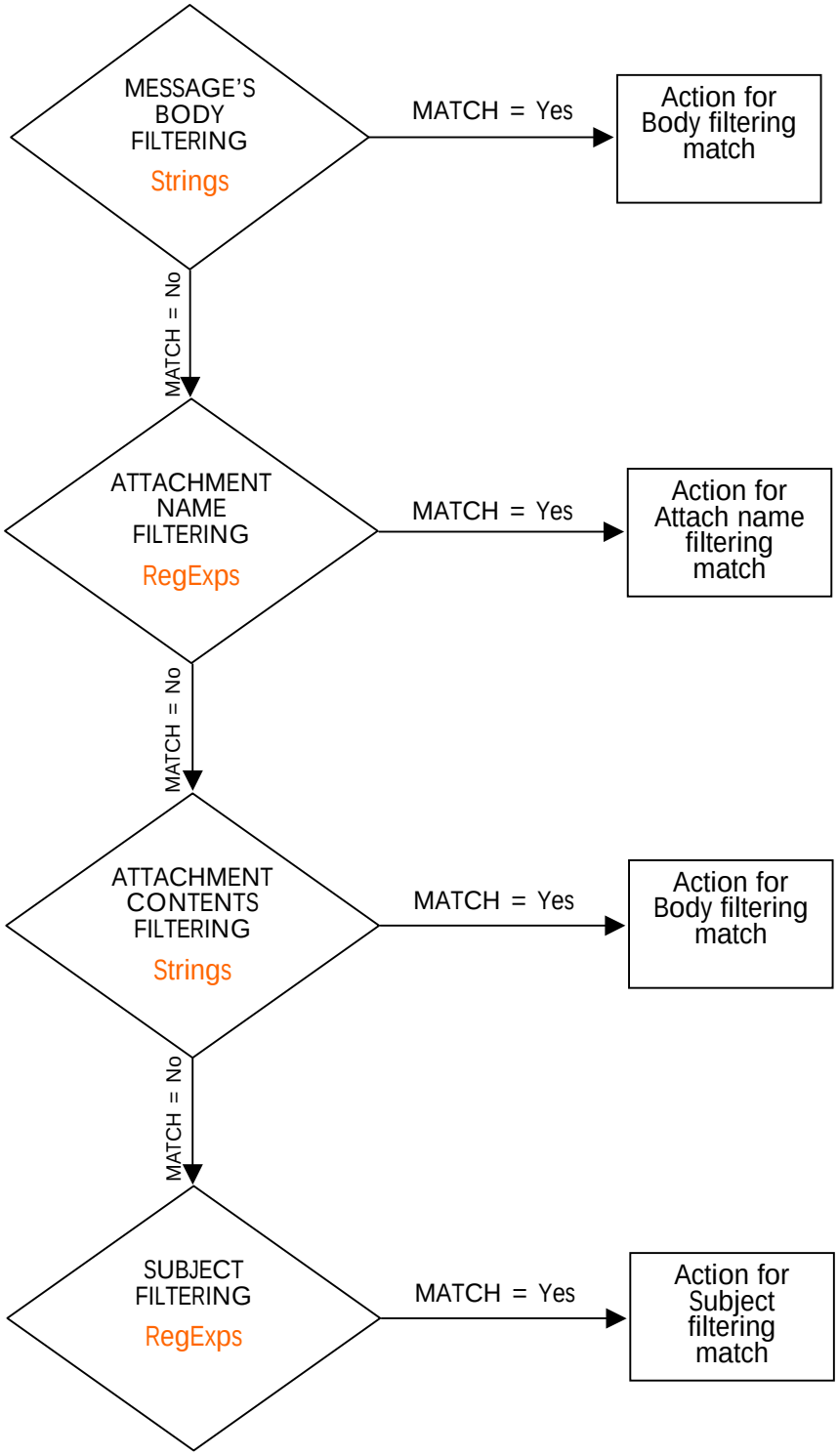
Note: The user-defined body filtering is only used starting with version 8.4.0 of **ravmd**; previous versions of **ravmd** have used POSIX regular expressions for body filtering.

The rules you define are processed in the following order:

- Message's body,
- Attachment file names,
- Attachment contents,
- Subject.

If you define more rules for one single component, the rules will be processed in the order you are defining them.

If more than one component are matched by a body filtering rule, for instance, the action defined by the system administrator is executed for all the matched components.



The scheme above is illustrating the different content filtering modules of **ravmd** and the way they basically work (using POSIX regular expressions or user-defined strings).

Here are some *Frequently Asked Questions* users of **RAV AntiVirus for Mail Servers** have asked about the *Advanced Content Filtering* feature of **ravmd**. You can even find an example of configuring a content filter for mail messages containing one specific string.

FAQ 16: Rejecting double extension files

Question: Has anyone setup the configuration file to reject any attachment with a double extension?

Answer: Please use in your regexp file from your ${ETCDIR} directory:

```
var_regexp = .*\..*\..*
```

Then define the action to be taken by **ravmd** in your actions file from your ${ETCDIR} directory:

```
var_action = reject
```

In all the groups for which you want to reject the messages containing double extension attachments use:

```
filter_attachment var_regexp var_action
```

Please note that this restrictive action will also filter the .tar.gz files, for instance.

FAQ 17: Denying certain attachment extensions

Question: How can I deny incoming messages containing attachment with extensions known to be dangerous?

Answer: The attachment name filtering feature of **ravmd** can help you if you want to deny incoming messages containing attachment with specific extensions. The attachment name filtering module of **ravmd** is using POSIX regular expressions.

Here is an example for how to deny .exe attachment files:

Please use in the regexp file from your ${ETCDIR} directory:

```
file_regexp = .*\.exe
```

In the actions file from your ${ETCDIR} define:

```
file_action = delete, reject
```

In all the groups for which you want to reject the messages containing .exe attachments use:

```
filter_attachment file_regexp file_action
```

To add other types of attachments separate them with a | symbol in the regexp definition.

Example:

```
file_regexp = .*\.((vbs)|(vbe)|(js)|(exe)|(com)|(pif) |(lnk)|(scr)|(bat)|(shs)|(sh))
```

As is the case for each change in the configuration files (ravmd.conf, global, english, english.equiv), you must restart **ravmd**:

```
kill -HUP `cat ${DATADIR}/run/ravmd.pid`.
```

FAQ 18: Example of subject filtering

Question: Can I have an example of subject filtering for mail messages containing one specific expression in their **Subject** field?

Answer: Yes, you can. Here you can find how to create a content filtering rule for mail subjects containing the "xxx" expression. Please note that this feature is not available in **ravsendmail**.

The following options are available for the mail messages matching the subject filtering rule: **copy, ignore, reject, discard**.

For this scenario, the mail will be allowed to pass **RAV AntiVirus for Mail Servers**. The sender and the receiver will not receive warnings, but a warning will be sent to the administrator.

- In the regexp file from your ${ETCDIR}, define the xxx expression:
  subjxxx_regexp = xxx
- Define the action for xxx in the actions file:
  define xxxsubj_action = ignore

This will allow the xxx mail to pass the content filtering module of **ravmd**.

- To add other words, separate them with a | symbol in the regexp definition.

Example:

```
subjxxx_regexp = (word1)|(word2)|(word3)
```

- Edit the file ${ETCDIR}/groups/global file.
- Specify the administrator's mail address for alerting him that a mail matching the subject filtering rule is entering the company:
  admin_addr=administrator@yourcompany.com
- Activate the subject filtering rule by adding the following line:
  filter_subject subjxxx_regexp xxxsubj_act

As is the case for each change in the configuration files (ravmd.conf, global, english, english.equiv), you must restart **ravmd**:
kill -HUP `cat ${DATADIR}/run/ravmd.pid`.

FAQ 19: Example of body filtering

Question: Can I have an example of body filtering for mail messages containing one specific expression in their bodies?

Answer: Here is one example from which you can find how to create a body filtering rule for mail messages containing the following expressions in their bodies: “confidential”, “salaries” and “balance sheet”.

For this scenario, the mail messages matching the body filtering rule will not be allowed to pass **ravmd**. The sender and the receiver will not receive warnings, but a warning will be sent to the administrator.

- In the regexp file from your ${ETCDIR}, define the string confidential: bodyconfidential_string = confidential
- To add other words, separate them with a | symbol on the string definition. *Example:* bodyconfidential_string = confidential|salaries|balance sheet
- Define the action for confidential in the actions file from your ${ETCDIR}: bodyconfidential_action = reject

This will not allow the mail messages containing to pass the content filtering module of **ravmd**.

- Edit the file ${ETCDIR}/groups/global file.
- Specify the administrator's mail address for alerting him that a mail matching a body filtering rule is entering the company: admin_addr=administrator@yourcompany.com
- Activate the content filter by adding the following line: filter_subject bodyconfidential_string bodyconfidential_action

As is the case for each change in the configuration files (ravmd.conf, global, english, english.equiv), always remember to restart **ravmd**: kill -HUP `cat ${DATADIR}/run/ravmd.pid`.

Explaining the parameters

The parameters included in this configuration file for **ravmd** (ravmd.conf) have different functions. Some are used for specifying the domain parameters, other for specifying the group members, the actions for the scanning engine, the warning messages and the sender of warning messages and so one. All the parameters have been grouped below depending on their function.

Some of these parameters are group-specific, meaning that they are different for each defined group. Other parameters are common for different groups and/or are inherited from the [global] group. This classification is also important for understanding the way **ravmd** is working.

Domain parameters

domain = enumeration

Description: This parameter specifies the domains scanned by **RAV AntiVirus**.

Note: During the evaluation period of 30 days you can set only two domains. Mails to/from other domains are delivered normally, without being scanned.

This parameter is a global one. It is sufficient to define it in the [global] group.

Important: You **must** specify at least one domain name, or else **ravmd** will not start. Starting with the 8.3.3 version of **ravmd**, the following default groups are provided: machine.name and domain.name.

Example:

```
domain = mail.domain.com, domain.com
domain = second.domain.net
```

Important: In the acceptation of **ravmd** and according to the **License Agreement**, a 'domain' is defined as "*the string which follows the '@' symbol in a mail address*".

Group members

sender = enumeration

Description: Parameter used for specifying the mail addresses of the senders who will be members in the actual group.

Example:

```
sender = user1@domain1.com, user2@domain1.net
sender = user3@domain2.org
```

receiver = enumeration

Description: Parameter used for specifying the mail addresses of the receivers who will be members in the actual group.

Example:

```
receiver = user4@domain4.com, user5@domain4.org
receiver = user5@domain2.org
```

from_host = enumeration

Description: Parameter used for specifying the hosts that are members in the actual group.

Example:

```
from_host = mail.domain1.com, domain1.net
from_host = domain2.org
```

to_host = enumeration

Description: Parameter used for specifying the receiving host names members in the actual group.

Example:

```
to_host = domain3.com, domain3.net
to_host = domain3.com
```

Engine actions

The following parameters are used to define the actions for the scanning engine: **infected_actions, suspicious_actions.** The infected_actions parameter helps you define the actions to be performed when an infected object is found, and the suspicious_actions parameter - the actions to be performed when a suspicious object is found.

infected_actions = variable

Description: Parameter used for specifying a variable name defined in the **actions** file, which contains the actions to be performed when an infected object is found. If this parameter is not defined then the *reject* action is used for the infected mails.

Example:

```
infected_actions = act_for_infected_files
```

Where:

```
act_for_infected_files = clean, move, delete, reject, discard
```

In this example, when an infected file is detected, **ravmd** tries first to *clean* that file. If the cleaning action is completed successfully, **ravmd** moves to the next file. If the cleaning action fails, **ravmd** tries to *move* (*copy* to quarantine and *delete* that file from mail) the file. If the moving action is completed successfully, **ravmd** moves to the next file. If the moving action fails, **ravmd** tries to *delete* the file, and so on. The *ignore*, *reject* and *discard* actions **always** return success.

Note: ravmd appends a *reject* action to the actions enumeration by default.

suspicious_actions = variable

Description: Parameter used for specifying a variable name defined in the **actions** file, which contains the actions to be performed when a suspicious object is found. If this parameter is not defined then the *reject* action is used for the suspicious mails.

Example:

```
suspicious_actions = act_for_suspicious_files
```

Where:

```
act_for_suspicious_files = move, rename, delete, ignore
```

As in the previous example, when **ravmd** detects a suspicious file, it tries successively to *move*, *rename* and *delete* that file. If the move action fails, **ravmd** tries to rename the file (see bellow the description for rename_ext). If the *rename* action fails, **ravmd** tries to *delete* the file. If one of the previous actions is successfully completed, **ravmd** moves to the next file. Eventually, if all of the actions (*move, rename, delete*) fail, **ravmd** will ignore that file.

Engine parameters

use_heuristics = boolean

Description: This parameter is used to control the heuristic methods for detecting new viruses.

Default value: **Yes**.

Example:

```
use_heuristics = no
```

use_cf_inside_embedded_objects = boolean

Description: Use this parameter to specify if **ravmd** will use the content filtering feature for embedded objects (i.e. files included in archives, scripts inside HTML files, OLE objects).

Default value: **Yes**.

Example:

```
use_cf_inside_embedded_objects = no
```

Note: Setting the use_cf_inside_embedded_objects to No will determine **ravmd** to exclude files inside attachments from the content filtering search.

cf_do_not_scan_extensions = enumeration

Description: Use this parameter to instruct **ravmd** not to apply the content filter feature to the specified attachment file types.

Default value: **-not defined-**.

Accepted values: Valid file extensions (preceded by dot and separated by blank spaces and/or commas) plus **All** (if the cf_do_not_scan_extensions parameter is set to **All**, all the attachment files will be excluded from content filtering).

Example 1:

```
cf_do_not_scan_extensions = .jpg .jpeg .gif .mpeg
```

Example 2:

```
cf_do_not_scan_extensions = All
```

scan_packed_executables = boolean

Description: This parameter is used to control the scanning process for packed executables (i.e. vpack, ucexe, pepack, etc.)

Default value: **Yes**.

Example:

```
scan_packed_executables = no
```

scan_archives = boolean

Description: This parameter is used to control scanning in archive files, like **ZIP**, **ARJ**, **RAR**, **LHA**, **LHZ**, **ACE**, **CAB**, etc. If the Boolean value is set to **Yes**, **ravmd** will scan inside archives.

If the Boolean value is set to **No**, **ravmd** will not scan inside archives.

Default value: **Yes**.

Example:

```
scan_archives = yes
```

rename_ext = string

Description: Parameter used for specifying the *extension* used to *rename* the infected/suspicious files. This function is necessary for preventing inexperienced users from accessing by accident infected/suspicious files moved to Quarantine.

Default extension is: **_??**

Example:

```
rename_ext = _??
```

smart_scan = boolean

Description: Parameter used for specifying the scanning modes for **ravmd**. The available options are:

- scan all files,
- let **ravmd** decide what files to scan.

Note: If smart_scan is not defined, then **ravmd** will scan ALL files. By default, the smart scanning is enabled.

Example:

```
smart_scan = yes
```

Warning messages

The following parameters help you define the messages used to create warning mails in different circumstances (virus found, subject filtering match, attachment name filtering match, content filtering match, etc). If some warning messages are not specified for the [global] group, then **ravmd** uses a default string (<<not defined>>). For all the other groups, the warning messages are inherited from the [global] group.

_virus_warning_messages

Description: Section used for specifying the contents of the warning mails sent by **ravmd** when a *virus* is found in one mail message.

_subject_filter_warning_messages

Description: Section used for specifying the contents of the warning mail sent by **ravmd** when the content filtering is enabled and the search in the mail's **Subject** field has yielded a *match* with one of the user-defined rules.

_attachment_filter_warning_messages

Description: Section used for specifying the contents of the warning mail sent by **ravmd** when the content filtering is enabled and the search in the mail's **Attachment's name** field has yielded a *match* with one of the user-defined rules.

_content_filter_warning_messages

Description: Section used for specifying the *content* of the warning mail sent by **ravmd** when the content filtering is enabled and the search in the mail's **Body** or **Attachment** has yielded a *match* with one of the user-defined rules.

warning_mail_subj = variable

Description: Parameter used for specifying the *subject* of the warning mails.

Example:

```
warning_mail_subj = wm_sbj
```

Note: In the **Warning Mails Message Declarations** section you must specify: wm_sbj = "RAV AntiVirus scan results."

infected_msg = variable

Description: Parameter used for specifying the *body* of the warning mail sent by **ravmd** when an *infected* file is detected.

Example:

```
infected_msg = wm_inf_msg
```

Where:

wm_inf_msg = "The file ATTACH_NAME attached to mail (with subject:SUBJECT) sent by FROM_USER to TO_USER(S) is infected with virus: VIRUS_NAME."

suspicious_msg = variable

Description: Parameter used for specifying the *body* of the warning mail sent by **ravmd** when a *suspicious* file is detected.

Example:

```
suspicious_msg = wm_sus_msg
```

Where:

```
wm_sus_msg = "The file ATTACH_NAME attached to mail (with subject:SUBJECT) sent by FROM_USER to TO_USER(S) contains suspicious code."
```

ignored_msg = variable

Description: Parameter used for specifying the *body* of the warning mail sent by **ravmd** when an *infected/suspicious* mail file is ignored.

Example:

```
ignored_msg = wm_ign_msg
```

Where:

```
wm_ign_msg = "All the defined actions have failed. Do not use this file."
```

rejected_msg = variable

Description: Parameter used for specifying the *body* of the warning mail sent by **ravmd** when an *infected/suspicious* mail file is rejected.

Example:

```
rejected_msg = wm_rej_msg
```

Where:

```
wm_rej_msg = "The mail was rejected because it contains dangerous code."
```

discarded_msg = variable

Description: Parameter used for specifying the *body* of the warning mail sent by **ravmd** when an *infected/suspicious* mail file is discarded. **Discard** is a new action available starting with **ravmd** version 8.3.3.

The value for **variable** must be declared in the language file and the language.equiv file must be included in the group file. So, in the ${ETCDIR}/languages/english.equiv file, define:

```
_virus_warning_messages
discarded_msg=discarded_m_english
 .....
_subject_filter_warning_messages
discarded_msg=discarded_m_english
```

.....

_content_filter_warning_messages

discarded_msg=discarded_m_english

_attachment_filter_warning_messages

discarded_msg=discarded_m_english

Example:

discarded_msg = discarded_m_english

Where:

discarded_m_english = "This mail was discarded. Please contact your system administrator."

cleaned_msg = variable

Description: Parameter used for specifying the *body* of the info mail sent by **ravmd** when a file is *cleaned*.

Example:

cleaned_msg = clean_ok

Where:

clean_ok = "The file was successfully cleaned by RAV AntiVirus."

moved_msg = variable

Description: Parameter used for specifying the *body* of the info mail sent by **ravmd** when a file is *moved*.

Example:

moved_msg = move_ok

Where:

move_ok = "The file was successfully moved to quarantine with name: QUARANTINE_NAME."

copied_msg = variable

Description: Parameter used for specifying the *body* of the info mail sent by **ravmd** when a file is *copied*.

Example:

copied_msg = copy_ok

Where:

copy_ok = "The file was successfully copied to quarantine with name: QUARANTINE_NAME."

deleted_msg = variable

Description: Parameter used for specifying the *body* of the info mail sent by **ravmd** when a file is *deleted*.

Example:

deleted_msg = delete_ok

Where:

delete_ok = "The file was successfully deleted by RAV AntiVirus."

renamed_msg = variable

Description: Parameter used for specifying the *body* of the info mail sent by **ravmd** when a file is *renamed*.

Example:

renamed_msg = rename_ok

Where:

rename_ok = "The file was successfully renamed by RAV AntiVirus."

saved_inf_msg = variable

saved_sus_msg = variable

Description: Parameters used for specifying the string used in the warning mail when an infected/suspicious file is *saved* to quarantine.

Example:

saved_inf_msg = save_ok
saved_sus_msg = save_ok

Where:

save_ok = "The mail file SAVED_FILE_NAME was saved to quarantine."

cannot_clean_msg = variable

Description: Parameter used for specifying the *body* of the warning mail sent by **ravmd** when a file *cannot be cleaned*.

Example:

cannot_clean_msg = not_cleaned

Where:

not_cleaned = "Cannot clean this file."

cannot_move_msg = variable

Description: Parameter used for specifying the *body* of the warning mail sent by **ravmd** when a file *cannot be moved*.

Example:

cannot_move_msg = not_moved

Where:

not_moved = "Cannot move this file."

cannot_copy_msg = variable

Description: Parameter used for specifying the *body* of the warning mail sent by **ravmd** when a file *cannot be copied*.

Example:

```
cannot_copy_msg = not_copied
```

Where:

```
not_copied = "Cannot copy this file."
```

cannot_delete_msg = variable

Description: Parameter used for specifying the *body* of the warning mail sent by **ravmd** when a file *cannot be deleted*.

Example:

```
cannot_delete_msg = not_deleted
```

Where:

```
not_deleted = "Cannot delete this file."
```

cannot_rename_msg = variable

Description: Parameter used for specifying the *body* of the warning mail sent by **ravmd** when a file *cannot be renamed*.

Example:

```
cannot_rename_msg = not_renamed
```

Where:

```
not_renamed = "Cannot rename this file."
```

cannot_save_inf_msg = variable

cannot_save_sus_msg = variable

Description: Parameters used for specifying the *string* used in the warning mail when the infected/suspicious file cannot be saved to quarantine.

Example:

```
cannot_save_inf_msg = not_saved
cannot_save_sus_msg = not_saved
```

Where:

```
not_saved= "The infected mail file cannot be saved to quarantine."
```

Specifying the sender of the warning mails

ravms_name = string

on_host = string

smtp_server = string

smtp_port = number

ravms_full_name = string

Description: Using these parameters you can define the mail address for the sender of the warning mails. *Default values* are provided and they will probably work.

Define these fields only if warning mails are sent when a virus is found or if you want to use a different account instead of **ravms**. Specify the **smtp_server** IP address only if that machine is behind a firewall and **ravmd** can't get its host name. If you are using Postfix as MTA then you can set **ravmd** to use a specified port when sending warning mails. Setting **smtp_port** on 10026 (in our configuration example) will make Postfix to send those mails without being scanned.

ravms_full_name is a parameter included in **ravmd** starting with version 8.3.3. This parameter is used for compiling the sender's mail address according to RFC822, the standard for the format of ARPA Internet text messages.

Default values:

ravms_name = ravms

on_host = official host name

smtp_server = official host IP address

smtp_port = 25

ravms_full_name = RAV Antivirus

Example:

```
ravms_name = ravms
on host = ravantivirus.com
smtp_server = 127.0.0.1
smtp_port = 25
ravms_full_name = RAV AntiVirus Scanner
```

The mail address displayed in the warning mail will be: "RAV Antivirus Scanner" <ravms@ravantivirus.com>.

no_subject = string

Description: Parameter used for specifying the string replacing the SUBJECT macro in the warning mail if **ravmd** does not find a valid subject in the infected email.

Default value: **--no subject found--.**

Example:

```
no_subject = "original mail didn't contain any subject field"
```

mailer_daemon = string

Description: Parameter used for specifying the name that will replace the FROM_USER macro when the mail sender is **<>**.

Default value: **--unknown--**.

Example:

```
mailer_daemon= "MAILER-DAEMON"
```

Antispam parameters

The parameters pertaining to the antispam module of **ravmd** are described below.

The default configuration is included in the antispam file that you can find in the ${ETCDIR} directory.

accuracy_low

accuracy_medium

accuracy_high

accuracy_very_high

Description: Keywords designating the accuracy level.

quarantine = string

Description: String specified in the _define_strings section defining the location where the messages meeting certain spam patterns will be saved for the groups where the **save** action is configured.

Default value: ${DATADIR}/bulk.

extra_header = string

Description: String specified in the _define_strings section, defining the extra-header that will be added to the message tagged as spam.

The *default values* depend on the corresponding bulk detection accuracy level.

Example:

```
extra_header = bulk_header_high_english
```

extra_subject = string

Description: String specified in the _define_strings section, defining the extra-subject that will be added in the **Subject** field of the messages meeting certain spam patterns.

The *default values* depend on the corresponding bulk detection accuracy level.

Example:

```
extra_subject= bulk_subject_high_english
```

embedded_msg = string

Description: String specified in the _define_strings section, defining the message that will be used for the embedded mail body.

The *default values* depend on the corresponding bulk detection accuracy level.

Example:

```
embedded_msg= bulk_embedded_high_english
```

forward_to = enumeration

Description: List of mail addresses where the spam mail is to be forwarded. This parameter is available only from version 8.4.1 of **ravmd**.

Example:

forward_to = admin@domain.com

actions = variable

Description: String defined in **actions** file specifying the actions to be taken by **ravmd** for the corresponding bulk detection level.

The *default values* depend on the corresponding bulk detection accuracy level.

bulk_actions_low = add_subject, add_header, deliver

bulk_actions_medium = add_subject, add_header, deliver

bulk_actions_high = embed, add_subject, add_header, deliver

bulk_actions_very_high = save, discard

Example:

actions = bulk_actions_high

Note: When using this feature of **ravmd**, the messages tagged as spam are reinjected in the MTA queue using the following syntax:

cat <modified_mail> | sendmail -i -f<sender> <receivers>

(you must have 'sendmail' executable in your search path for commands - environment variable PATH).

If the sendmail binary is not corresponding to the binary of your MTA, then you should make the link manually in /usr/sbin (for example) by using (example for Qmail MTA):

ln -sf /var/qmail/bin/sendmail /usr/sbin/sendmail

This command assumes that you have the Qmail's binaries in /var/qmail/bin.

Real-time Blackhole List parameters

Real-time Blackhole List (RBL) is a feature available in **RAV AntiVirus for Mail Servers** starting with version 8.3.3. This functionality is implemented in librbl.so and it consists in defining a dynamic list (rbl_site) with sites containing listings of known spammers.

Note: The rbl_site list has to be configured and updated by your system administrators.

When this feature is enabled, **RAV AntiVirus for Mail Servers** checks if any of the IP addresses from the mail's header is listed on one of the websites defined in the rbl_site. If it does, the mail is automatically rejected.

No warning mail is sent; no file is saved to **RAV Quarantine** folder. The librbl.so library is loaded only if at least one site is included in rbl_site.

The **rbl** options are used for the [global] group. You cannot set different values for different groups. If you do not want the mails for one of your groups to be checked against the **Real-time Blackhole List**, you should use the following parameter in the configuration for that group:

```
use_rbl = no
```

Below you can find the parameters associated with this feature.

use_rbl = boolean

Description: Use this parameter to specify if the Real-time Blackhole List (RBL) feature is used or not for one specific group.

Accepted values: **Yes** or **No**.

Default value: **No**.

rbl_site = enumeration

Description: List containing the sites where **ravmd** will be looking for IP addresses for known spammers to be checked against the IP addresses from the mail's header.

rbl_cache_file = string

Description: Variable containing the path where **ravmd** cache is saved when the program is stopped. When **ravmd** is restarted, the cache is re-loaded from this path.

Default value: ${DATADIR}/rbl.cache.

rbl_cache_size= number

Description: Library caching the latest IP addresses **rbl** has been looked for. The parameter following the '=' sign specifies how many IP addresses are included in this cache.

Default value: **10007.**

rbl_timeout = number

Description: Number specifying how many seconds **ravmd** will be waiting for one site to answer to its DNS request.

Accepted values: **minim=2**, **maxim=30**.

Default value: **5.**

rbl_retry = number

Description: Number specifying how many times the DNS request is sent to the same server in case of timeout.

Accepted values: **minim=1, maxim=5**.

Default value: **4.**

White/Black List parameters

wbl_accept IP, IP/MASK, IP/netmask, mail@address, mail.domain

wbl_reject IP, IP/MASK, IP/netmask, mail@address, mail.domain

wbl_discard IP, IP/MASK, IP/netmask, mail@address, mail.domain

Description: These parameters are used for specifying the parameters for the **Static White/Black List**, a feature included in **ravmd** starting with version 8.3.3. wbl_discard is available only from version 8.4.1. When using this parameter, the corresponding mails are discarded (rejected with no bounce back to the sender, saving therefore valuable bandwidth for users).

Using the **White/Black List** feature you can define IP addresses and mail addresses/domains to be included in the **Static White List** (mail messages to be received) or in the **Static Black List** (mail messages to be rejected). The keyword wbl_accept anticipates the IP addresses and mail addresses/domains added to the **Static White List**. The keyword wbl_reject anticipates the IP addresses and mail addresses/domains added to the **Static Black List**.

The rules are applied in the order you define them. The first rule to match will give the result of the **wbl** search: accept or reject. The **wbl** options are not inherited from the [global] group. The **wbl** search is done before the **rbl** search. If there is a **reject** rule match for the current mail, the message is automatically rejected. If there is a wbl_accept rule match for the current mail, no **rbl** search is executed. If no rule is found in the **wbl** for the current mail, the **rbl** search is executed (unless you specified use_rbl=no for the corresponding group).

No warning mail is sent; no file is saved to **RAV Quarantine** folder. The libwbl.so library is loaded only if at least one **wbl** rule is defined for one group.

Example:

1. If you want to accept mail messages only from the IP address 193.230.245.100 and to reject all mail messages from the entire class 193.230.245.0/24 (193.230.245.0/255.255.255.0), use:

   wbl_accept 193.230.245.100

   wbl_reject 193.230.245.100/24

2. If you want to accept mail messages only from the user@domain.com mail address and to reject all mail messages from the other mail addresses from the domain.com, use:

   wbl_accept user@domain.com

   wbl_reject domain

Miscellaneous parameters

These parameters are inherited by additional groups from the [global] group.

warn_header_msg = variable

Description: Parameter used for specifying the text used as a header in the warning mail.

Example:
warn_header_msg = notification_header

Where:
notification_header = "This message is automatically generated by RAV AntiVirus."

warn_footer_msg = variable

Description: Parameter used for specifying the text used as footer in the warning mail.

Example:
warn_footer_msg = notification_footer

Where:
notification_footer = "The mail scanned was received from: HEADER_RECEIVED."

warn_txt_msg = variable

Description: Parameter used for specifying the text appended after the default one in the warn.txt file.

Example:
warn_txt_msg = append_to_warn_txt

Where:
append_to_warn_txt = "Please contact your system administrator for more information."

For more information about the warn.txt, please refer to FAQ 4.

charset = string

Description: Parameter (available beginning with version 8.3.3 of **ravmd**) used for specifying the value of the **charset** field used in the MIME header of the warning mails. If the warning mails contain strings with a character encoding system different from ASCII you should specify the respective encoding using the **charset** parameter.

Default value: **US-ASCII**.

Example:
charset = iso-2022-jp

custom_msg = number

The warning mails are created using the strings defined by the user in the _define_strings section and RAV-related information (always added during the evaluation period). A warning mail looks like this:

RAV AntiVirus for OSTYPE version: x.x.x (snapshot-yyyymmdd)
Copyright (c) 1996-2001 GeCAD The Software Company. All rights reserved.
X more days to evaluate. (or: Registered version for N domain(s).)
Running on host: HOSTNAME

The file ATTACHED_NAME attached to mail (with subject:SUBJECT) sent by FROM_USER to TO_USER(S) is infected with virus: VIRUS_NAME. The file was successfully deleted by RAV AntiVirus.

Scan engine 8.7 () for i386.
Last update: Thu, 27 Jun 2002 15:44:53 +0300
Scanning for 68249 malwares (viruses, trojans and worms).

To get a free 30-days evaluation version of RAV AntiVirus v8 (fully functional) please visit:
http://www.ravantivirus.com

The macros are replaced with their corresponding values. In the registered version of **RAV AntiVirus for Mail Servers**, all RAV-related information can be omitted, except for the first header line.

In the registered version the warning mails can be customized.

Default value: **255** (use all RAV information).

Accepted values:

= 0 – No information.
+ 1 – Add “Registered version ...”
+ 2 – Add “Running on host ...”
+ 4 – Add “Scan engine ...”
+ 8 – Add "Last update ...”
+16 – Add “Scanning for ...”
+32 – Add “To get a free 30-days ...”
+64 – Add “Copyright ...”
+128 – Add “RAV AntiVirus for ...”

Example:
custom_msg = 136
RAV AntiVirus for OSTYPE version: x.x.x (snapshot-yyyymmdd)
The file ATTACHED_NAME attached to mail (with subject: SUBJECT) sent by FROM_USER to TO_USER(S) is infected with virus: VIRUS_NAME.
The file was successfully deleted by RAV AntiVirus.
Last update: Thu, 27 Jun 2002 15:44:53 +0300

max_processes = number

Description: Parameter used for specifying the maximum number of **ravmd** scanning processes running at the same time.

Accepted values: **1** to **128**.

Default value: **24**.

Example:
max_processes = 80

timeout_per_file = number

timeout_per_mega = number

Description: These parameters are used to specify the maximum time in seconds that a

scanning process can spend on a file. The total timeout is computed using the following formula:

*timeout_per_file + timeout_per_mega * filesize/1Mb*

Accepted values: **10-600** (for timeout_per_file) and **5-600** (for timeout_per_mega).

Default values: **300** for timeout_per_file **60** for timeout_per_mega.

Example:

```
timeout_per_file = 120
timeout_per_mega = 25
```

save_infected = boolean

save_suspicious = boolean

Description: Parameter used for specifying if infected/suspicious mail files are saved to the local disk before executing any action. You can set these options to **Yes** or **No**.

Default value: **Yes**.

Note: The infected/suspicious messages will be placed in the quarantine regardless of the defined infected_actions and suspicious_actions.

Example:

```
save_infected = no
save_suspicious = yes
```

quarantine = string

Description: String used to specify the directory where the infected/suspicious mails are saved.

Default value: ${DATADIR}/quarantine.

Example:

```
quarantine = /tmp/rav/quarantine
```

RAV logging system

When **ravmd** is launched, it logs some information in the system mail info file (using syslog) then it switches to the internal log. By default the **log** files are created in: ${DATADIR}/log. It is possible to use a different log file for every group, with different options for it. For this you have to declare one of the log options in that group. If a group doesn't contain any log options then the log data for the [global] group will be used. Here are the parameters used for **ravmd**'s logging system:

log_file_name = string

Description: Parameter used for specifying the path to and the name of the log file used by **ravmd**. If the path to the log file is not valid, **ravmd** will exit and inform the user that the log file could not be created.

Default value: ${DATADIR}/log/group_name.

Example:

```
log_file_name = ${DATADIR}/log/global
log_file_name = ${DATADIR}/log/my_group
```

log_max_length = {number}(Kb|Mb)

Description: Parameter used for specifying the maximum log file size.

Default value: **500Kb**.

Accepted values: **10-1000Kb** and **1-10Mb**. Starting with version 8.4.0 beta 2 of **ravmd**, the **0** value is also accepted, assigning an unlimited length to the log file used by **ravmd**.

log_rotate_after = {number}(m|h|d)

Description: Parameter used for specifying the period of time elapsing before creating a new log file.

Default value: **6h** (hours). *Accepted values*: **10-60m** (minutes, with 23m rounded to 20m, 25m rounded to 30m), **1-24h** (hours) or and **1-30d** (days). Starting with version 8.4.0 beta 2 of **ravmd**, the **0** value is also accepted, determining **ravmd** not to rotate the log file anymore.

log_delete_after = {number}(h|d|m)

Description: Parameter used to specify the period elapsing before deleting log files older than the specified period.

Default value: **7d** (days).

Accepted values: **1-24h** (hours), **1-30d** (days) and **1-12m** (months). Starting with version 8.4.0 beta 2 of **ravmd**, the **0** value is also accepted, determining **ravmd** not to delete the log file anymore.

log_use_zip = boolean

Description: Parameter used for specifying if the log files should be archived (using the zlib library) or not.

Default value: **Yes**.

log_level = number

Description: Number controlling the logging level used by **ravmd**.

Default value: **2047** (use all **ravmd** information).

Accepted values:

0 – No log information.

+ 1 – Add error messages (i.e. “can't fork”, “error reading from socket”, etc.).

+ 2 – Add the name of the mail file.

+ 4 – Add mime part scanned.

+ 8 – Add final scan result.

+ 16 – Add actions taken during scanning.

+ 32 – Add the mail addresses of the sender and the first receiver.

+ 64 – Add the group name matched.

+ 128 – Add information generated by the external triggered update.

+ 256 – Add LICENSE LIMIT warnings.

+ 512 – Add **WBL** logs.

+ 1024 – Add **RBL** logs.

+ 2048 - Add actions performed for bulk mails (this log level is available only from version 8.4.1).

+ 4096 - Add all IPs from the **Received:** mail header field (this log level is available only from version 8.4.1).

+ 8192 - Add the rule matched by the content filtering (this log level is available only from version 8.4.1).

Example:

To set **ravmd** to display only **RBL** logs, set the value for log_level to 1024. To set **ravmd** to display error messages *and* **RBL** logs, set the value for log_level to 1025 (1 + 1024).

Group-specific parameters

The following parameters must have **different** values for every defined group. If these parameters are not defined for each group, their values are **NOT** copied from the [global] group. The *default values* are specified for each of these parameters in the following section.

filter_subject variable_1 variable_2

Description: This parameter is used for *subject filtering*. **variable_1** is a regular expression defined in the regexp file from your ${ETCDIR} directory. **variable_2** is a variable defined in the actions file from your ${ETCDIR} directory. If this parameter is not defined then the **subject filtering** is disabled.

Example:

```
filter_subject subj_regexp subj_actions
```

Where:

```
subj_regexp = I love you
subj_actions = reject
```

Using this rule, mails having the "I love you" string in the **Subject** field will be rejected. Plea note that you can use here a regular expression, not only a simple string.

filter_attachment variable_1 variable_2

Description: This parameter is used to filter the mail's attachments names. **variable_1** is a regular expression defined in the regexp file from your ${ETCDIR} directory. **variable_2** is a variable defined in the actions file from your ${ETCDIR} directory. If this parameter is not defined then the **attachment names filtering** is disabled.

Example:

```
filter_attachment file_regexp file_actions
```

Where:

```
file_regexp = .*.((vbs)|(exe)|(com))
file_actions = delete, reject
```

This filtering rule deletes all the attached files with extension ".vbs", ".exe" or ".com" from all mail messages. If a file cannot be deleted then the whole mail is rejected.

filter_content variable_1 variable_2

Description: This parameter is used to filter the mail's *body* and the *attachment's contents*. **variable_1** is a string defined in the regexp file from your ${ETCDIR} directory. **variable_2** is a variable defined in the actions file from your ${ETCDIR} directory. If this parameter is not defined, then the **body filtering** (inside the *mail body* and the *attachment's contents*) is disabled.

Example:

```
filter_content body_string_1 body_actions_1
filter_content body_string_2 body_actions_2
filter_content body_string_3 body_actions_3
filter_content body_string_4 body_actions_4
filter_content body_string_5 body_actions_5
filter_content body_string_6 body_actions_6
```

Where:

```
body_string_1 = confidential
body_string_2 = salaries
body_string_3 = balance sheet
body_string_4 = tax
body_string_5 = income
body_string_6 = revenue
```

and:

```
body_actions_1 = delete, reject
body_actions_2 = delete, reject
body_actions_3 = delete, reject
body_actions_4 = copy, ignore
body_actions_5 = copy, ignore
body_actions_6 = copy, ignore
```

In this case the content filtering module of **ravmd** is looking for user-specified strings. A priority is assigned to each rule. The rule with the highest priority is the first one you specify (body_string_1). This rule has a priority of 1. The next rules receive lower priority levels (2…n), depending on the order you are specifying them (body_string_2 has a priority of 2, body_string_3 has a priority of 3 and so on). In our example, **ravmd** will start searching for all the strings defined by the user (confidential, salaries, balance sheet, tax, income and revenue) in the same time. If the first match is found for one string having the highest priority level (confidential, in this example), the search stops and the actions from body_actions_1 are executed. If the first match is found for one string having a lower priority level (tax for instance), the search will continue for the rest of the mail, looking for eventual matches for confidential, salaries and balance sheet, strings with higher priority. If a match is found, **ravmd** will execute body_actions_1 if the match is for confidential. If the match is not for confidential but for salaries for instance, **ravmd** will keep looking for confidential. If a match with confidential is found, **ravmd** will execute body_actions_1. If no match with confidential is found, **ravmd** will execute body_actions_2 (actions corresponding to salaries). **ravmd** will ignore the first match (for tax) in all these cases.

If after finding a match for tax no match with higher priority strings (confidential, salaries or balance sheet) is found, **ravmd** will execute body_actions_4 (the actions corresponding to tax).

Because body_actions_1, body_actions_2 and body_actions_3 are identical (delete, reject) and body_actions_4, body_actions_5 and body_actions_6 are also identical (copy, ignore), you can significantly simplify your work using:

```
body_string_1 = confidential|salaries|balance sheet
body_string_2 = tax|income|revenue
```

and:

```
body_actions_1 = delete, reject
body_actions_2 = delete, reject
```

The behaviour of **ravmd** is in this case the same as explained above.

Note: If you want to define content filtering rules for mail bodies containing strings that include the „|" character, use „||" (i.e. body_string = confidential||salaries will return matches for mail bodies containing the „confidential|salaries" expression).

warn_sender = enumeration

Description: Use this parameter to specify when to send warnings to the mail sender. The valid keywords are explained in the table below.

warn_receiver = enumeration

Description: Use this parameter to specify when to send warnings to the mail receivers. The valid keywords are explained in the table below.

warn_admin = enumeration

Description: Use this parameter to specify when to send warnings to the mail receivers. The valid keywords are explained in the table below.

You have to specify *who* is warned by **ravmd** and *when*. If one of these parameters is not defined then the respective user category will **not** receive warnings. The valid keywords are specified in the table below.

***Table 2**:* Keywords for warning messages.

Keyword	Meaning
found_virus	Send alert to the defined recipients when a virus is found.
found_subject	Send alert to the defined recipients when the subject matches a content filtering rule.
found_attach	Send alert to the defined recipients when an attached file name matches a content filtering rule.
found_content	Send alert to the defined recipients when the mail body contains a string matched by a content filtering rule.
always	Send alert to the defined recipients in all the above-mentioned situations.
never	Never send alert.
match_all_flags	Send alert to the defined recipients only when *ALL* the previously defined rules (found_virus, found_subject, found_attach or found_content) are matched.
warn_domains	New flag available from version 8.4.1. When using warn_domains, only the users from RAV-protected domains (specified in the domain parameter) are notified. You should use this flag for the warn_sender parameter, in order to avoid warning mails from being sent to fictive addresses used by some viruses.

Please note that these values are not inherited from the [global] group. This way you can specify different notification policies for different groups. For more info, please read the examples below.

Example 1:

```
warn_sender = found_virus, found_subject, found_attach, found_content
warn_receivers = found_virus
warn_admin = always
```

In this example, the sender is warned whenever a virus is found *or* the subject matches a content filtering rule *or* an attached file name matches a content filtering rule *or* the mail body contains a string matched by a content filtering rule. The receivers are warned *only* when a virus is found. The administrator is *always* warned.

Example 2:
warn_sender = found_virus, found_subject, match_all_flags

In this example, the sender is warned whenever a virus is found *AND* the subject matches a content filtering rule.

Example 3:
warn_receiver = found_virus, found_subject, found_content, match_all_flags

In this example, the receivers are warned whenever a virus is found *AND* the subject matches a content filtering rule *AND* the mail body contains a content filtering rule match.

Example 4:
warn_sender = found_virus, found_subject, found_content, match_all_flags, warn_domains

In this example, only the senders from RAV-protected domains are warned whenever a virus is found *AND* the subject matches a content filtering rule *AND* the mail body contains a content filtering rule match.

do_not_scan = boolean

Description: Parameter used for specifying if the mail files for the current group are scanned or not. This way it is possible to exclude some mail addresses and/or domains from the scanning process.

Default value: **No**.

Example:
do_not_scan = yes

do_not_warn = enumeration

Description: Parameter used for specifying the mail addresses that will not be notified.

do_not_show = enumeration

Description: Parameter used for specifying the mail addresses that will be hidden in all warning mails.

Note: Why is this parameter required? There may be cases when one user should not be notified or his mail address should not be displayed in the warning mails. This parameter will help you solve the problem. Note that only the receiver's mail address is compared against the specified address.

do_not_warn and do_not_show parameters have no *default values* (no comparison will be made).

Example:
do_not_warn = user3@domain2.org
do_not_show = user1@domain1.com, user2@domain1.com

admin_addr = enumeration

Description: Parameter used for specifying the mail addresses of the administrators to be notified when infected or suspicious files are detected. The warning mail contains messages created using the strings specified for each situation. This parameter has no *default value*.

Example:
admin_addr = postmaster@domain1.com, postmaster@domain2.net, user1@domain1.com
admin_addr = ravmails@stats.ravantivirus.com

Note: Forwarding warning mails to ravmails@stats.ravantivirus.com in case of virus infections is highly recommended. This will help RAV Research Team to determine the level of spreading for new viruses or pinpoint potential detection problems. The Technical Support team at GeCAD Software may also diagnose potential problems for the user, such as old updates of the virus signatures database. In any case, the user will be informed about the best solution for solving his problem. GeCAD Software treats each mail in strict confidence.

antispam_configuration = enumeration

Description: Using the antispam_configuration parameter you can set the desired actions for the four different accuracy levels available (**low**, **medium**, **high** and **very high**). In the **enumeration** part you should specify name_conf_antispam1, name_conf_antispam2, name_conf_antispam3 and name_conf_antispam4, corresponding to the four different accuracy levels.

antispam_configuration = name_conf_antispam1, name_conf_antispam2, name_conf_antispam3, name_conf_antispam4

advertising_msg = variable

Description: Using the advertising_msg parameter you can append a personal message to each mail message scanned by **ravmd**. The length of the mail message will grow accordingly when using this feature.

The advertising_msg parameter must be declared in the group file or even in the [global] group. The value for **variable** must be declared in the language file and the language.equiv file must be included in the group file.

Note 1: RAV AntiVirus for Mail Servers cannot append the text to any mail due to the MIME format of the mail and the advertising_msg feature is not supported by **ravcgate**.

Note 2: The advertising_msg parameter is not supported by **ravcgate**.

Example:

- In the group file (that might be even the [global] one) define:
  _include ${ETCDIR}/languages/english.equiv
  advertising_msg = my_advertising
- In ${ETCDIR}/languages/english define:
  my_advertising = "COMPANY_NAME maintains mail messages virus free"

update_executable= string

Description: Parameter used for specifying the name of the executable file used by **ravmd** to start the update process. You must specify the full path to the executable file. The update process is started only if **ravmd** is receiving an update mail sent by RAV Team (triggered update - feature available from **ravmd** version 8.4.0). If you want to receive update mails, please send a request to: updates-l-subscribe@lists.ravantivirus.com

Default value: ${BINDIR}/ravmdupdate.sh.

Example:

The following line disables the **update executable** feature:

```
update_executable = null
```

The following line executes the specified script file every time an update mail is processed by **ravmd**:

```
update_executable = /home/ravms/ravmdupdate.sh
```

Embedded messages

embed_clean_mail = boolean

Default value: **No.**

embed_cleaned_mail = boolean

Default value: **No.**

embed_unclean_mail = boolean

Default value: **No.**

use_embedded_msg = boolean

Default value: **No.**

use_embedded_warning = boolean

Default value: **No.**

Description: These parameters are used for specifying what messages you want to be send as embedded mails. Embedded mails are a new feature available in **ravmd** version 8.3.3. After being scanned, the original message can be attached to a new mail message, created by **ravmd**, and sent to its addressees. When the new mail is accepted by the MTA, the original mail is discarded (if the MTA is supporting the **discard** feature) or rejected (if the MTA does not support the **discard** feature, i.e. Courier or Dmail). When the new mail is not accepted by the MTA, the original message is sent instead.

You can specify the mail messages to be encapsulated:

- **embed_clean_mail**: encapsulate all clean mails (mail messages that were not infected/did not contain suspicious code),
- **embed_cleaned_mail**: encapsulate all cleaned mails (mail messages that were infected/did contain suspicious code, but they were cleaned by **RAV AntiVirus for Mail Servers**), or
- **embed_unclean_mail**: encapsulate all uncleaned mails (mail messages that were infected/did contain suspicious code and RAV AntiVirus was not able to disinfect them).

For each status described above the administrator can send a customized message using the embedded_clean_msg, embedded_cleaned_msg and embedded_unclean_msg parameters (described below).

- use_embedded_msg: when using this parameter, embedded_clean_msg, embedded_cleaned_msg and/or embedded_unclean_msg are added to the encapsulated mail.
- use_embedded_warning: when using this parameter, the warning mail is added to the encapsulated mail only if the original mail is infected.

The rules for embedded mails are not inherited from the [global] group – you have to define the parameters for the suitable groups.

embedded_clean_msg=variable

embedded_cleaned_msg=variable

embedded_unclean_msg=variable

Definition: These three parameters are used for specifying the customized message send when embedding clean/cleaned/uncleaned messages.

The newly created message will therefore include, besides the original message:

- the customized message (when defined by the administrator); and
- the customized warning messages (when defined by the administrator).

embed_queue = string

Definition: The path on the local disk where **ravmd** is temporarily saving the embedded mail messages, before sending them.

Default value: ${DATADIR}/tmp.

Note: When using this feature of **ravmd**, the messages tagged as spam are reinjected in the MTA queue using the following syntax:

```
cat <modified_mail> | sendmail -i -f<sender> <receivers>
```

(you must have 'sendmail' executable in your search path for commands - environment variable PATH).

If the sendmail binary is not corresponding to the binary of your MTA, then you should make the link manually in /usr/sbin (for example) by using (example for Qmail MTA):

```
ln -sf /var/qmail/bin/sendmail /usr/sbin/sendmail
```

This command assumes that you have the Qmail's binaries in /var/qmail/bin.

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

SEE ALSO

ravmd(8), ravav(8)

USER GUIDE

RAVMD file

NAME

ravmd - **rav m**ail scanning **d**aemon

SYNOPSIS

${BINDIR}/ravmd [-cdfhtvugsLTBIEDR] [--config=config_file][--dump_conf=config_file] [--foreground] [--help] [--testconf=config_file] [--version] [--user=user_name][--group=group_name] [--syslog] [--license] [--temp-path=directory] [--bin-path=directory] [--lib-path=directory] [--etc-path=directory] [--data-path=directory] [--rave-path=directory]

DESCRIPTION

DEFINITIONS

"filter client"

A program that resides in the ${BINDIR} directory and whose name depends on your MTA (i.e. **ravexim**, **ravsendmail**, **ravpostfix**, etc.). Its function is to hook the MTA's e-mail flux and pass every mail to **ravmd** for scanning. Depending on the response the "filter client" is receiving from **ravmd**, it will deliver or discard the respective mail message.

ravmd is powered by the platform independent *RAV Engine*, so it can detect and clean all malwares detected by this (i.e. Linux, Windows, DOS or Unices-based, viruses, macros, Trojans, hoaxes, etc.). The program can scan e-mail files in MIME format containing attachments encoded with: **base64, quoted-printable, uuencode, 7bit, 8bit**.

ravmd also supports:

- e-mail *content filtering* for the e-mail subject, attachment file names and message body; and
- an antispam functionality, based on the new bulk mail module, integrated in ravmd starting with its version 8.4.0, and older features like **Real-time Blackhole List** (RBL) or **White-Black List** (WBL), available in ravmd since version 8.3.3. For more details, please read the *ravmd configuration file* section in the *User Guide for RAV AntiVirus for Mail Servers,* available here.

When **ravmd** starts, it loads its configuration from ${ETCDIR}/ravmd.conf. If there are some errors (i.e. missing or bad format of these files), **ravmd** exits with non zero status. In all the other cases, **ravmd** starts in background and binds an UNIX socket (${DATADIR}/run/_ravmdcom) and listens it for "**filter clients**" queries. When a "**filter client**" connects to this socket, **ravmd** forks and the child will process "**filter client**" commands.

If started with --syslog, the daemon uses the system mail info log file for logging. The following command should display that file:

```
cat /etc/syslog.conf |grep -e  ^[^#].*mail\.[^acdenw] | \

awk '{print $2}'
```

If you would like to perform periodic updates to the RAV AntiVirus engine and virus signature files, you should use a scheduling daemon (**cron, fcron, ucron**...) to execute the ravmdupdate.sh script located in ${BINDIR}. Please modify that script file to fit your configuration. We recommend configuring the scheduling process so that the update process is executed once or twice an hour.

*Example for **fcron**:*

```
su
fcrontab -e
```

Insert the following line to run ravmdupdate.sh every 30 minutes:

```
@ 30 ${BINDIR}/ravmdupdate.sh
```

*Example for **cron**:*

```
su
crontab -e
```

Insert the following line to run ravmdupdate.sh every 30 minutes:

```
*/30 * * * * ${BINDIR}/ravmdupdate.sh
```

OPTIONS

Arguments are mandatory for both long and sort options.

-c, --config=config_file

Use the config_file instead of ${ETCDIR}/ravmd.conf.

-d, --dumpconf=config_file

Print the configuration from config_file to **stdout**.

-f, --foreground

Run the daemon in foreground instead of background.

-h, --help

Display the help screen.

-t, --testconf=config_file

Test the specified config_file configuration file.

-v, --version

Display the version of **ravmd**.

-u, --user=user_name

-g, --group=group_name

Use **user_name** and **group_name** as real user and real group for **ravmd** processes. By default the current user *uid* and *gid* are used.

Important: For security reasons, when **ravmd** is executed as root, it is highly recommended to use these options in order to drop the superuser privileges to an unprivileged user.

-s, --syslog

Use **syslog** daemon instead of RAV logging system.

-L, --license

Display the current license.

-T, --temp-path=directory

The temporary directory used to unpack large mail attachments (i.e. archived files).

-B, --bin-path=directory

The path to RAV binaries. The default value is ${BINDIR}.

-l, --lib-path=directory

The path to RAV libraries. The default value is ${LIBDIR}.

-E, --etc-path=directory

The path to RAV configuration files. The default value is ${ETCDIR}.

-D, --data-path=directory

The path to RAV data files (**rave**, **log**, **run**, **tmp**, **ravmd.key**, etc.). The default value is ${DATADIR}.

-R, --rave-path=directory

The path to RAV Engine directory (**rave**). The default value is ${DATADIR}/rave.

EXIT STATUS

On error it returns non-zero, else returns zero.

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

SEE ALSO

ravmd.conf(5), ravav(8), sysklogd(8)

USER GUIDE

RAVAV configuration file

NAME

ravav - RAV AntiVirus command-line version

SYNOPSIS

${BINDIR}/ravav [OPTION ...] TARGET [TARGET ...]

DESCRIPTION

ravav is a command line antivirus being able to detect and remove known and unknown computer viruses, Trojans and worms. It uses the same engine as all the **RAV AntiVirus** products, with daily updates available on our web site: http://www.ravantivirus.com/pages/dldupdate.php?type=Daily.

OPTIONS

The following parameters are currently recognized by **ravav**:

-h, --help

Print the help screen to the console.

-v, --version

Display **ravav** version.

-V, --virlist

Print the list of viruses.

-D, --decode_qto=file_name

Decode the specified file from **RAV Quarantine**.

--license=AuthorizationCode

Licenses **ravav** using the Authorization Code provided by your supplier, as a string.

-u, --update=engine|full

Start the updating process.

--host=host_name

Download files from host_name. The latest versions of **RAV AntiVirus** products can be found on the following ftp site: ftp://ftp.ravantivirus.com/pub/rav/. Mirror sites for **RAV AntiVirus** products and updates are available all over the world. A complete and updated list of these mirror sites can be found here.

--ravepath=engine_dir

The path to RAV Engine directory (**rave**). Default value for **engine_dir** is ${DATADIR}/rave.

--hostpath=dirname

RAV path on **ftp** host. Default value for **dirname** is /pub/rav.

--ftpuser=username

The user name used on the ftp connection. Default value for **ftpuser** is “ftp”.

--ftppass=password

The password used on the ftp connection. Default value for **ftppass** is “rave@”.

--all

Scan all files (default).

--smart

Use smart scan mode.

--ask

Ask the user what settings to be used for scanning.

--clean

Clean viruses from infected objects.

--delete

Delete infected and suspicious files

--copy

Copy infected/suspicious objects to quarantine.

--move

Move infected/suspicious objects to quarantine.

--rename

Rename infected/suspicious using the extension defined with **-R** option.

-A, --archive

Scan inside archives.

-M, --mail

Scan mail files.

-H, --heuristics=on|off

Boolean controlling the heuristic scanning.

-I, --integrity_check=on|off

Enable/disable integrity checker.

-Q, --quarantine=dir_name

Specify the path to the Quarantine folder. Default value for **dir_name** is ${DATADIR}/quarantine.

-R, --rename_ext=extension

Specify the extension used for rename action. Default extension is "_??".

-T, --temp-path=directory

Specify the temporary directory used by **ravav** to unpack large archived files.

-l, --listall

List all scanned files.

--report=filename

Report names of viruses found in the filename file.

--rptall

Include all scanned files in the filename file.

--append

Append information to the filename file.

EXIT STATUS

ravav returns the status of the last executed action:

1	The file is clean.
2	Infected file.
3	Suspicious file.
4	The file was cleaned.
5	Clean failed.
6	The file was deleted.
7	Delete failed.
8	The file was successfully copied to quarantine.
9	Copy failed.
10	The file was successfully moved to quarantine.
11	Move failed.
12	The file was renamed.
13	Rename failed.
20	No TARGET is defined.
30	Engine error.
31	Syntax error.
32	Help message.
33	Viruses list.
34	The updating process was successfully completed.
35	The updating process failed.
36	Already updated.
37	The licensing process was successfully completed.
38	The licensing process failed.

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

SEE ALSO

ravmd(8)

USER GUIDE

RAVUPDATE configuration file

NAME

ravupdate - Update utility for **ravmd**.

SYNOPSIS

ravupdate [-adfhStTvVY] [--help] [--ftp-passive=on|off] [--usage] [--use-proxy=on|off] [--dump] [--serverresponse] [--tries=number] [--proxy=http://[user[:password]@]sever:port] [--timeout=secs] [--verbose] [--version]

DESCRIPTION

With new viruses appearing daily, your antivirus software (no matter what company is producing it) will become obsolete in weeks or even days, being unable to protect you from new threats. Updating your antivirus software is therefore a pre-requisite in the fight against malwares.

ravupdate is a utility helping you securely update your **RAV AntiVirus for Mail Servers** (**ravmd**). It has the following features:

- Works with the **ftp** and **http** (with and without proxy) protocols;
- Allows updating from mirrors;
- Guarantees the integrity of the downloaded files;
- Allows “on the fly” update;
- Auto-update;
- Default configuration.

Supported protocols

ravupdate currently works with the **ftp** and **http** (with and without proxy) protocols. If you have any suggestions concerning new protocols to be supported by **ravmd**, please send us an e-mail (ravteam@ravantivirus.com).

FTP

The FTP protocol allows the update procedure to be executed via one ftp server or one HTTP proxy.

The following options are customisable:

- User name;

- Password
- Server;
- Transfer type (active/passive);
- Timeout;
- Number of tries (in case of failure – how many times **ravupdate** will retry to execute the update procedure before returning an error message).

HTTP

The FTP protocol allows the update procedure to be executed via HTTP (with or without proxy).

The following options are customisable:

- User name;
- Password
- Server;
- Transfer type (active/passive)
- Timeout

Number of tries (in case of failure – how many times ravupdate will retry to execute the update procedure before returning an error message).

Updating from mirrors

ravupdate is designed to work with different servers implementing a certain type of protocol. This functionality was made possible using a minimal set of characteristics from each protocol.

For example, for a FTP protocol the mirror must implement the following commands: **USER, TYPE, PASV, PORT, RETR, REST, ABOR, QUIT, CWD.**

For HTTP, the web server (proxy) must support the 1.1 version of the HTTP protocol.

Integrity of the downloaded files

ravupdate guarantees the integrity of the updated files by downloading at first a file containing information about the package needing to be updated/downloaded. The file initially downloaded by **ravupdate** is called **infofile**.

The program uses the information contained in this infofile to find out what files will be updated. The initially downloaded file is also used to check the integrity of the other downloaded files. Only after all the files needed for the update procedure are correctly downloaded **ravupdate** moves to the next phase: installing the updated files.

"On the fly" update

If the product is working when the update procedure is undergone, **ravupdate** is trying its best to make sure that the impact of the update procedure on the programs using the updated files is minimal. For instance, in case the engine of **RAV AntiVirus for Mail Servers** is updated, **ravupdate** sends a SIGHUP signal to the **ravmd** daemon, forcing it to reload the updated engine. The programs already launched will continue the scanning process using the old engine, but new processes will make use of the updated engine. In case we are talking about updating the scanning daemon (quite rarely however), the daemon must be stopped and restarted using the updated program.

Auto-update

In case a bug is reported in **ravupdate** or a new version of this program is launched, the file containing info about the package to be updated also contains information about the version of **ravupdate**. The program will update itself, reload and start the update procedure for the selected package.

Default configuration

ravupdate is shipped with a default configuration that allows running the update procedure on most of the computers using **RAV AntiVirus for Mail Servers**. However, for an enhanced performance of **ravupdate**, we advise you to customize the configuration of **ravupdate** according to your specifications.

USAGE

Definitions

Module

Data containing information about one or more file logically grouped to obtain a certain functionality in **RAV AntiVirus for Mail Servers**.

Package

Data (transmitted in one communication session) containing one or more modules.

Example:

RAV for Qmail is a package that might contain the following modules:

- rav engine – containing the files from the rave folder
- ravmd – containing the ravmd file and the scripts allowing you to launch/stop/restart/reload **ravmd** while it is working.
- ravqmail – containing the RAV filter for Qmail, linking **ravmd** to Qmail.

Description

At the beginning, **ravupdate** downloads a file containing information about the package you want to be updated. Depending on the modules you selected to be updated and the information from this file, **RAV AntiVirus for Mail Serves** checks every file susceptible to be updated. A list containing the files needing to be updated is created and the downloading process for these files begins.

After checking the integrity of the downloaded files **ravupdate** begins the install process for each of the modules needing update, in a precise order. In the example given above, first the updated engine is installed and then the updated **ravmd** and the filer are installed.

The installation procedure contains three different stages. For some modules, depending on their peculiarities, one or two of these stages might be skipped. However, the order these stages are executed is always as follows:

- **Pre-install**. The purpose of this step is to insure the successful of the install procedure. During this pre-install phase usually the correct permissions are checked and it is established if some programs have to be shut down.
- **Install**. The downloaded files are copied to a temporary location allowing the product to operate correctly.
- **Post-install**. **RAV AntiVirus for Mail Servers** is restarted or, in case the restart is not necessary, the user is notified the update procedure has successfully ended.

Example:

Here is a brief example of what each phase is doing in case of updating the **engine** module containing the scanning engine.

- During the *Pre-install* phase: **ravupdate** is checking if you have writing permissions for copying the downloaded files in the folder containing the old engine
- During the *Install* phase: **ravupdate** is copying the new files to the rave folder;
- During the *Post-install* phase: **ravupdate** is sending a SIGHUP signal to the ravmd process (if active), forcing it to reload the new engine.

Security and ravupdate

As far as the process security is concerned, we have to keep in mind that, in most cases, the update is made for a product under execution. Therefore, it is very important to ensure the authentication and the integrity of the files being updated. **ravupdate** answers this demanding request using the following mechanism:

- The **infofile** is digitally signed using an asymmetric system. The public key is encoded in the update program. This update program is only using files signed with the corresponding private key.
- The **infofile** contains the following information about the files used in the update process:
    - The file's size;
    - The date of the last modification in the file;
    - The path of the file (on the server used for updating **ravmd**);

- The path on the file (on the local disk, where the update is being executed);
- A digital signature of the file.

The update process uses this info to check each file downloaded from the update mirror in terms of precision (*is this the file I have to download?*), integrity (*does the downloaded file have the size specified in the initially downloaded file*?) and identity (is the digital signature recognized?). Only if the checking is returning the expected values the update process itself is launched. If the checking procedure for the downloaded files fails, the updating process returns an error code. Usually, this means the file was not correctly downloaded from the mirror site or this site is just executing its resynchronisation procedure.

CONFIGURATION

ravupdate can be configured:

- using a configuration file;
- using command-line parameters.

Note: The command-line parameters are overwriting the parameters from the configuration file.

SECTION DESCRIPTION

The configuration file for **ravupdate** contains *sections* and these sections contain *attributes*, *names* and *values*.

The values can be: numbers, strings or Booleans.

The *[global]* section

The [global] section contains the attributes managing the general behaviour of **ravupdate**:

CONFDIR

Description: String containing the install path for the configuration files.

Default value: ${ETCDIR}.

DATADIR

Description: String containing the path to data required by **RAV AntiVirus** programs.

Default value: ${DATADIR}.

INSTALL

Description: String containing the install path for **RAV AntiVirus** programs.

Default value: /opt/rav for Linux, Solaris and MacOS X, /usr/local for BSDs.

Note1: Please note that the update procedure will return an error message in case this folder does not exist or the user does not have writing privileges in this folder.

Note 2: The **INSTALL** parameter has no correspondent in the command-line.

PLATFORM

Description: String describing the platform on which you wish to execute the update procedure. The available options are: i386, ppc, sparc, s390, etc.

The default value is usually correct.

Note 1: Selecting a different platform than the one on which the update procedure is executing might determine the update process to fail.

Note 2: The PLATFORM parameter has no correspondent in the command-line.

alarm

Description: Number specifying the time (in seconds) allowed for one process to end the update procedure.

Note 1: In case the program is not ending the update procedure in the specified period of time, the program will return a corresponding error message.

Note 2: The **alarm** parameter has no correspondent in the command-line.

proxy

Description: String with the following format: http://proxy_server_name:port_number (the port_number parameter may be overlooked) specifying the proxy server used in the update procedure.

Note 1: In case you wish to use a proxy, the use-proxy parameter has to be configured to Yes.

Note 2: The **proxy** parameter from the *config* file can be overwritten from the command-line using the following parameters (in short or long form): -p, --proxy=http://port:name

Note 3: When the port_number parameter is overlooked, ravupdate is using the default value (**80**).

proxy-auth

Description: String helping to authenticate the proxy user.

Default value: None. This is currently the only available value. Some other values will be implemented in future versions of **ravupdate**.

Note: The proxy-auth parameter can be overwritten from the command-line using: -a, --proxy-auth=none|basic|digest

serverresponse

Description: Boolean. When set to Yes the program will display the commands it is sending and the answers received from the server.

Note 1: The **serverresponse** parameter is useful to establish the potential causes for an eventual failure of the update procedure, so it is advisable to set it to Yes.

Note 2: The **serverresponse** parameter can be activated from the command line using: -S, --server-response

temppath

Description: String containing a valid path for the folder used to save the temporary files downloaded from the mirror site.

Note 1: A file named update.start is created in the specified **temppath**. This file is used for synchronizing/blocking/using more than one update process. It is advisable that only update program has accessing right for this file.

Note 2: The temppath parameter has no correspondent in the command-line.

timeout

Description: Number specifying the time (in seconds) allowed for a writing/reading operation to end successfully.

Default value: **0** (no timeout).

Note 1: We do not advise you to set for this parameter values over 20.

Note 2: The **timeout** parameter can be overwritten from the command-line using: -T, --timeout=nr

tries

Description: Number specifying the number of tries allowed for the communication protocol before the update procedure fails.

Note 1: In case the value for tries is set to **0**, the **alarm** parameter is the one responsible for establishing the time allowed for one process to complete.

Note 2: The **tries** parameter can be overwritten from the command-line using: -t, --tries=nr

use-proxy

Description: Boolean enabling/disabling the usage of the proxy server for one specific protocol.

Note: The **use-proxy** parameter can be enabled from the command-line using: -Y, --use-proxy

verbose

Description: Boolean allowing or not **ravupdate** to display more information about the process.

Note 1: The **verbose** parameter can be useful when debugging or studying the behaviour of **ravupdate**.

Note 2: The **verbose** parameter can be enabled from the command-line using: -v

The [ftp] section

The [ftp] section contains the following parameters used for the configuring the **ftp** connections: **passive**, **password**, **port**, **username**.

passive

Description: Boolean establishing if the update program or the **ftp** server is initiating the connection.

Available values: **Off**/**On**.

Default value: **Off**.

The **ftp** protocol uses two connections for transferring files between the **ftp server** and the **ftp client**. The first connection is used to send commands and receive answers. The second connection is created for each transferred file. Closing this second connection usually marks the ending the file transfer. For this second connection, the **ftp server** or the **ftp client** has to initiate the connection and send information, in order to allow the other to connect.

The **passive** parameter is managing this connection:

- When set to **On**, the update program is establishing the connection with the ftp server and is sending the information the ftp server needs for connecting.
- When set to **Off**, the ftp server is establishing the connection and send the client the available information in the first transmission.

Note 1: Some ftp servers are using passive connections; other ftp servers are using active connections. Please make sure you have all the required information before configuring the **passive** parameter.

Note 2: The passive parameter can be overwritten from the command-line using: **-f, --ftp-passive=on|off**

password

Description: String used by the **ftp** server to identify the user executing the update process.

The *default value* for **password** depends on the version of the program you are using.

Note: The password parameter has no correspondent in the command-line.

port

Description: Number used to specify the default port used by the **ftp** protocol.

Default value: **21**.

username

Description: String used by the **ftp** server to identify the user executing the update process.

Default value: **ftp**.

Note: The **username** parameter has no correspondent in the command-line.

The [http] section

The [http] section contains the following parameters used for the configuring the **http** connections: **password, port, username**.

password

Description: String used by the http server to identify the user executing the update process.

Default value: ravupdate(snapshot-20020528)@ravantivirus.com.

Note: The password parameter has no correspondent in the command-line.

port

Description: Number used to specify the default port used by the **http** protocol.

Default value: **80**.

username

Description: String used by the **http** server to identify the user executing the update process.

Default value: **anonymous**.

Note: The **username** parameter has no correspondent in the command-line.

The [host] section

The [host] section contains information about the infofile.

host

Description: String representing the name or the IP address of the server used for updating **RAV AntiVirus for Mail Servers**.

Note: The host parameter has to be customized to the closest server.

infofile

Description: String containing the relative path to infofile.

protocol

Description: String containing the name of the protocol used for the updating process.

Default value: ftp.

Note: The protocol parameter has no correspondent in the command-line.

The [modules] section

engine

Description: Boolean specifying if the user wants to update only the engine of RAV AntiVirus for Mail Servers.

Available options: **On/Off**.

Default value: On.

Important: The [modules] section will contain other parameters ('ravcgate', 'ravdmail', 'ravexim', 'ravmd', 'RAVMilter', 'ravpostfix', 'ravqmail' and 'ravsendmail') for specifying if the modules for rav clients will also be updated. These options in are not yet implemented. The *default value* for these parameters is **Off**.

EXIT STATUS

0	Update has been successfully completed.
1	There are no files to update - you have latest files.
2	Configuration error - check your **rup.conf** file
3	Another **ravupdate** process is running.
4	Can't find the temporary directory or the temporary directory does not exist.
5	System error (e.g fork, malloc etc).
6	Other error. Please manually run **ravupdate** with -S and -v to see what is wrong.

FILES

${ETCDIR}/rup.conf

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

SEE ALSO

ravmd(8)

USER GUIDE

RAVCGATE configuration file

NAME

ravcgate - RAV AntiVirus external filter for CommuniGate Pro.

SYNOPSIS

${BINDIR}/ravcgate

DESCRIPTION

This is the external filter program executed by CommuniGate Pro server in order to scan all messages for virus protection and/or content filtering. The program runs as a "filter client" for **ravmd**.

USAGE

- Set your domain names as values for the domain field in the **domains** file (you can find it in ${ETCDIR}).
- Open your web browser and connect to the CommuniGate Pro's web administration interface. If you installed CommuniGate Pro using the default values, type http://127.0.0.1:8010 in the address bar.
- Open **Settings->General->Helpers**.
- Check **Content filtering** and add the following path in **Program Path**: ${BINDIR}/ravcgate.
- Click on the **Update** button.
- Go to **Settings->Rules** and create a new rule (i.e. **rav**) and choose **Action** as **External Filter**.
- Create the **ravms** account (this account will be used for sending warning mails via the SMTP local port opened by CommuniGate Pro): **Go to Accounts->Create Account ravms**

Important: For more details on how to make a rule for an External Filter, visit http://www.stalker.com/CommuniGatePro/VirusScan.html#Scanning.

Note: RAV AntiVirus can scan multiple files in parallel. To activate this facility you must select more processors in **SETTINGS->Queue->Message Enqueuer**.

ENVIRONMENT

RAV_DATA_PATH

Starting with version 8.4.1 of **ravmd** the installation directories can be relocated. The environment variable must be declared before starting the CommuniGate Pro server and must point to the new location of RAV data files (**rave**, **log**, **run**, **tmp**, **ravmd.key**, **etc.**).

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

SEE ALSO

ravmd(8), ravmd.conf(5), ravav(8)

USER GUIDE

RAVCOURIER configuration file

NAME

ravcourier - external filter for the Courier MTA

SYNOPSIS

${BINDIR}/ravcourier

DESCRIPTION

This is the external filter program executed by the Courier MTA in order to scan all messages for virus protection and/or content filtering. The program runs as a “filter client” for **ravmd**.

USAGE

Here is a checklist for installing and using **ravcourier**:

- Install ravcourier: /usr/lib/courier/sbin/filterctl start ravcourier
- Uninstall ravcourier: /usr/lib/courier/sbin/filterctl stop ravcourier
- Start global mail filtering for Courier: /usr/lib/courier/sbin/courierfilter start

Filter configuration

When **ravcourier** is started, the program reads its runtime parameters from the ${ETCDIR}/ravcourier.conf file.

If the configuration file doesn't exist then the following default values will be used instead.

nthreads

Description: Working threads started in parallel.

Accepted values: between **1** and **128**.

Default value: **20**.

max_connections

Description: Maximum accepted connections.

Accepted values: between **1** and **256**.

Default value: **100**.

use_allfilters

Description: Install the filter in the '**allfilters**' directory. If you specify "No" here, the filter will be installed in the '**filters**' directory.

Default value: **Yes**.

filters_dir

Description: The full path to the filters root directory.

Default value: /usr/lib/courier/var.

queue_dir

Description: The full path to the queue directory.

Default value: "". This parameter must be used only if Courier is configured to use relative paths to its queue files.

Important: If you want to modify some of these parameters, then you have to edit the ${ETCDIR}/ravcourier.conf file and reinstall the filter:
/usr/lib/courier/sbin/filterctl stop ravcourier
/usr/lib/courier/sbin/filterctl start ravcourier

FILES

${ETCDIR}/ravcourier.conf

ENVIRONMENT

RAV_DATA_PATH

Starting with version 8.4.1 of **ravmd** the installation directories can be relocated. The environment variable must be declared before starting **ravcourier** and must point to the new location of RAV data files (**rave**, **log**, **run**, **tmp**, **ravmd.key**, **etc.**).

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

SEE ALSO

ravmd(8), ravmd.conf(5), ravav(8)

USER GUIDE

RAVDMAIL configuration file

NAME

ravdmail - external filter for **DMail**.

SYNOPSIS

${BINDIR}/ravdmail

DESCRIPTION

This is the external filter program executed by **DMail** server in order to scan all messages for virus protection and/or content filtering. The program runs as a "**filter client**" for **ravmd**.

USAGE

Add the following line in the DMail configuration file: virus_robot ${BINDIR}/ravdmail. After adding this line, the SMTP server configuration has to be reloaded: tellsmtp reload.

ENVIRONMENT

RAV_DATA_PATH

Starting with version 8.4.1 of **ravmd** the installation directories can be relocated. The environment variable must be declared before starting the DMail server and must point to the new location of RAV data files (**rave**, **log**, **run**, **tmp**, **ravmd.key**, **etc.**).

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

USER GUIDE

RAVEXIM configuration file

NAME

ravexim - RAV AntiVirus filter client" for **Exim.**

SYNOPSIS

${BINDIR}/ravexim rav_data_full_path $sender_address $recipients

DESCRIPTION

The program is executed by the **exim** system filter each time a new message is processed. **ravexim** is used for scanning all incoming/outgoing e-mails for virus protection and/or content filtering. It runs as a "**filter client**" for **ravmd**.

USAGE

rav_data_full_path

Starting with version 8.4.1, the users can change the default location of RAV directories. When doing so, rav_data_full_path must point to the location containing the RAV data files (**rave**, **log**, **run**, **tmp**, **ravmd.key**, etc.).

Default value for rav_data_full_path is ${DATADIR}.

The following parameters are **exim** internal variables:

$sender_address

The e-mail sender address.

$recipients

A list with the recipient addresses of a message.

EXIT CODES

The program returns some of the exit codes defined in the sysexits.h file:

0 - EX_OK

Successful termination.

64 - EX_USAGE

The command line parameters are not specified correctly.

66 - EX_NOINPUT

Cannot open a temporary file.

69 - EX_UNAVAILABLE

The **sendmail** executable is not found. You have to create a symbolic link to the exim executable: `ln -s /usr/exim/bin/exim /usr/sbin/sendmail`

71 - EX_OSERR

Cannot create a pipe or a new process.

73 - EX_CANTCREAT

Cannot create a temporary file.

74 - EX_IOERR

An error has occurred on a read/write operation.

75 - EX_TEMPFAIL

Temporary error: **ravmd** is not running or it doesn't temporarily accept connections.

77 - EX_NOPERM

The e-mail file is infected and its delivery is denied.

Note: All the other exit codes are those returned by the command: `sendmail -oMr mail-ok -i -f $sender $recipients`

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

SEE ALSO

ravmd.conf(5), ravmd(8)

USER GUIDE

RAVPOSTFIX configuration file

NAME

ravpostfix - RAV AntiVirus "**filter client**" for Postfix.

SYNOPSIS

${BINDIR}/ravpostfix [-hvSsCctflug] [--help] [--version] [--server_ip=IP_ADDRESS] [--server_port=PORT] [--client_ip=IP_ADDRESS] [--client_port=PORT][--timeout=SECONDS] [--foreground][--log_level=NUMBER] [--user=user_name] [--group=group_name]

DESCRIPTION

This is an external filter program integrated with **postfix** MTA and used for scanning all incoming/outgoing messages for virus protection and/or content filtering. It implements the protocol described in the **FILTER_README** file from **postfix** snapshot >= 20000531. The program runs as **filter client** for **ravmd**.

USAGE

-h, --help

Displays the help screen.

-v, --version

Displays **ravpostfix** version.

-S, --server_ip=IP_ADDRESS

The computer IP address where **ravpostfix** is running. Default: **127.0.0.1**

-s, --server_port=PORT

Inet port on server_ip where **ravpostfix** is listening. Default: **10025**

-C, --client_ip=IP_ADDRESS

The IP address of the computer where the second postfix SMTP server is running. Default: **127.0.0.1**

-c, --client_port=PORT

Inet port where second **postfix** SMTP server is listening. Default: **10026.**

-t, --timeout=SECONDS

The timeout in seconds used by ravpostfix for SMTP communication. Default: **120s.**

-f, --foreground

Runs the daemon in foreground instead of background (background is default value).

-l, --log_level=0|1|2

Control the logging details.

Default value: **1**.

-u, --user=user_name

-g, --group=group_name

Use **user_name** and **group_name** as real user and real group for ravpostfix processes. By default the current user *uid* and *gid* are used.

Important: For security reasons, when executing **ravpostfix** as root, it is highly recommended to use these options in order to drop the superuser privileges to an unprivileged user.

ENVIRONMENT

RAV_DATA_PATH

Starting with version 8.4.1 of **ravmd** the installation directories can be relocated. The environment variable must be declared before starting **ravpostfix** and must point to the new location of RAV data files (**rave**, **log**, **run**, **tmp**, **ravmd.key**, **etc.**).

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

SEE ALSO

ravmd(8), ravmd.conf(5), ravav(8)

USER GUIDE

RAVQMAIL configuration file

NAME

ravqmail - RAV AntiVirus “filter client” for **qmail**.

SYNOPSIS

${BINDIR}/ravqmail

INSTALL

In order to install **ravqmail** you must have installed **qmail**-1.03 or newer in directory /var/qmail. You must stop **qmail-send** from sending it the **SIGTERM** signal. After this you must rename the original **qmail-queue** to **qmail-queue.orig** and make a symbolic link named **qmail-queue** to **ravqmail**:

```
mv /var/qmail/bin/qmail-queue /var/qmail/bin/qmail-queue.orig

ln -s ${BINDIR}/ravqmail  /var/qmail/bin/qmail-queue
```

USAGE

After installing **ravqmail** you must start **ravmd** daemon. Then you can start **qmail** system.

UNINSTALL

In order to uninstall **ravqmail** you must stop **qmail-send** from sending it the **SIGTERM** signal. After this you must remove the **link** file **qmail-queue** and copy the original **qmail-queue.orig** in **qmail-queue**:

```
rm -f /var/qmail/bin/qmail-queue

mv /var/qmail/bin/qmail-queue.orig /var/qmail/bin/qmail-queue
```

For more details, please read the Notes section bellow.

FILES

After the installation process, ${BINDIR}/ravqmail must have the same owner, group and permissions as /var/qmail/bin/qmail-queue.orig**.** The ${DATADIR}/tmp and ${DATADIR}/run directories must have the same owner and group as /var/qmail/bin/qmail-queue.orig and the permissions set to **0750**.

EXIT CODES

The same as **qmail-queue(8)**.

NOTES

There are some programs or scripts automating the starting and stopping processes. If you are using one of them it might be wrong to send **SIGTERM** signal to **qmail-send** instead of using them to stop **qmail-send**, since these programs might re-spawn the **qmail-send** during the installation process therefore your **qmail** won't be able to placed e-mails in its queue.

When a mail message is handled by **qmail** first it is put in queue by using the **qmail-queue** program. Because in the installation process the original **qmail-queue** is replaced with **ravqmail** the e-mail is first scanned and after that ravqmail pass the e-mail to the **qmail-queue.orig** and replies with **qmail-queue.orig** exit code.

If **ravmd** is not started or **ravqmail** can't communicate with **ravmd**, it doesn't pass the e-mail to the original **qmail-queue.orig** and will exit with error code **71**, meaning that the mail server temporarily refuses to send the messages to any of the recipients.

Also if **ravmd** is configured to reject the e-mails that cannot be cleaned **ravqmail** doesn't pass the e-mail to **qmail-queue.orig** and exits with error code 31 meaning that the mail server permanently refuses to send the message to any recipients.

If there is a license limit **ravmd** will not scan the e-mails not belonging to the domains specified in the configuration file. These e-mails will be passed **unchanged** to **qmail-queue.orig**.

ENVIRONMENT

RAV_DATA_PATH

Starting with version 8.4.1 of **ravmd** the installation directories can be relocated. The environment variable must be declared before starting the Qmail server and must point to the new location of RAV data files (**rave**, **log**, **run**, **tmp**, **ravmd.key**, **etc.**).

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

SEE ALSO

ravmd.conf(5), ravmd(8), qmail-queue(8)

USER GUIDE

RAVSENDMAIL configuration file

NAME

ravsendmail - RAV AntiVirus "**filter client**" for Sendmail.

SYNOPSIS

${BINDIR}/ravsendmail rav_data_full_path $h $f $u $i

DESCRIPTION

The program will be executed by Sendmail MTA as a local mailer. It is used to scan all incoming/outgoing e-mails for virus protection and/or content filtering. The program runs as a "filter client" for **ravmd**.

USAGE

rav_data_full_path

Starting with version 8.4.1, the users can change the default location of RAV directories. When doing so, rav_data_full_path must point to the location containing the RAV data files (**rave**, **log**, **run**, **tmp**, **ravmd.key**, etc.).

Default value for rav_data_full_path is ${DATADIR}.

The following parameters are **sendmail** internal macros:

$h

The recipient host.

$f

The sender's e-mail address.

$u

The recipient e-mail address.

$i

Queue ID used to identify an e-mail file in the queue.

FILES

/etc/mail/sendmail.cf

NOTES

This product uses two sendmail executables running at the same time. It can introduce a significant delay in the e-mail delivery process depending on how often the queues are processed. This is why it is highly recommended to use the **RAVMilter** product instead of **ravsendmail**.

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

SEE ALSO

ravmd(8), ravmd.conf(5), ravav(8), sendmail(8)

USER GUIDE

RAVMILTER configuration file

NAME

RAVMilter - RAV AntiVirus "**filter client**" for sendmail with libmilter.

SYNOPSIS

${BINDIR}/RAVMilter [-dV] [-C sendmail.cf] [-g 0|1|2|3] [-X[on|off]] [--configuration=sendmail.cf] [--daemon] [--debug=0|1|2|3] [--addheader[=on|off]] [--help] [--usage] [--version]

DESCRIPTION

This is an external filter program used by **sendmail** (compiled with **libmilter** feature) MTA in order to scan all the incoming/outgoing messages for virus protection and/or content filtering. It uses the **libmilter feature** included in sendmail version 8.11 or later. The program runs as a client for **ravmd**.

USAGE

-d, --daemon

Run as daemon.

-g, --debug=0|1|2|3

Enable debug features (where 0 is "silent" and 3 is "verbose").

-C, --configuration=sendmail.cf

Read additional information from this file. See the **NOTES** section below.

-X, --addheader[=on|off]

Add or not **X-Version** header to each message scanned.

-V, --version

Print to **stdout** RAVMilter version and exits.

--help

Print the help screen to the console.

--usage

Display information about RAVMilter usage.

NOTES

The **Sendmail** version must be 8.11 or later to compile the **libmilter** feature of **sendmail**. Please read the libmilter/README file from the **sendmail** package for instructions on how to compile **sendmail** with this feature. After compiling **sendmail** and installing it with the **libmilter** feature, you can proceed with the installation of **ravmd**.

To configure **RAVMilter**, you must add the following two lines into /etc/mail/sendmail.mc:

```
define(`FFR_MILTER', `true')
INPUT_MAIL_FILTER(`RAVMilter',`S=local:/var/opt/rav/run/ RAVMilter.sock, F=R,
T=S:10s;R:5m;E:5m')
```

After that, you must generate /etc/mail/sendmail.cf with the following command:

```
m4 /etc/mail/sendmail.mc > etc/mail/sendmail.cf
```

When RAVMilter starts it will parse /etc/mail/sendmail.cf to find out what socket to bind (in our example it will bind the UNIX socket ${DATADIR}/run/RAVMilter.sock).

ENVIRONMENT

RAV_DATA_PATH

Starting with version 8.4.1 of **ravmd** the installation directories can be relocated. The environment variable must be declared before starting **RAVMilter** and must point to the new location of RAV data files (**rave**, **log**, **run**, **tmp**, **ravmd.key**, **etc.**).

BUGS

Please mail bug reports and suggestions to: ravteam@ravantivirus.com

SEE ALSO

ravmd(8), ravmd.conf(5), ravav(8), sendmail(8)

Appendix A: Bug Report Form

Although we have extensively tested **RAV AntiVirus for Mail Servers**, some bugs may get by us, or you may have incompatible hardware or software that we did not test.

If you experience any problems with **RAV AntiVirus for Mail Servers**, please print out this form and mail it to:

GeCAD Software S.R.L.
223, Mihai Bravu Blvd, 3rd district
Bucharest, ROMANIA,

or fax it at +40-21-3217803.

Alternatively, copy the **Bug Report Form** to your word processor, fill in the blanks and email the text file to support@ravantivirus.com or to betatest@ravantivirus.com (when the product you are reporting the bugs for has been beta released).

Thank you!

Today's Date: ___/___/___ (MM/DD/YY)
Title: [ ] Mrs. [ ] Miss [ ] Ms [ ] Mr. [ ] Other:_____
Name:
Company (if applicable):
Mail:
Address:
City:
State/Province:
ZIP/Postal Code:
Country:
Telephone (with Area & Country Codes):
Fax (with Area & Country Codes):

Program Name: **RAV AntiVirus for Mail Servers** version:_____ Registration Code:_____

Bugs, suggestions & comments:

(Please be as specific as possible about bugs. If we cannot duplicate your problem, we cannot help you fix it. Before sending a Bug Report, please read carefully the product documentation.)

SYSTEM CONFIGURATION

Type of CPU:

CPU frequency:

OS version:

Memory:

Hard disk:

Other:

USER GUIDE

Appendix B: Index