AVG 7.5 Free for Linux

User Manual

Document revision 75.2 (26.8.2008)

Contents

1. Introduction

- This User Manual is the full documentation describing **AVG 7.5 Free for Linux**.

a) AVG 7.5 Free for Linux Features

AVG 7.5 Free for Linux provides comprehensive and reliable protection against viruses for Linux powered machines. It offers many features, such as scheduled and on-demand scanning of folders, files, and common archive types for possible virus infection. You can also perform a scheduled or on-demand update of your **AVG** either from the Internet or from local update sources.

b) AVG 7.5 Free for Linux – Graphical User Interface

AVG 7.5 Free for Linux allows you to take advantage of all **AVG** system functions within the comfortable and well-arranged graphical user interface. For normal AVG users, on workstations and home computers, it is recommended to use only the graphical interface. The graphical user interface is both efficient and simple, and it can be used even by inexperienced Linux system users.

c) AVG 7.5 Free for Linux – Command Line Modules

Powerful standalone command line modules are included in all editions of **AVG 7.5 Free for Linux**. You can perform all possible on-demand file system tests and updates using these modules. They can be also utilized within for example the *cron* utility in order to schedule a regular automatic test or update.

Note: The use of command line modules is strictly recommended for proficient Linux users that have significant experience with Linux administration from command line and console interfaces!

2. Before Installation

2.1. Prerequisites

Before installing **AVG 7.5 Free for Linux**, you must verify that your system meets the following requirements:

a) Libraries

The following libraries are required in order to ensure the **AVG 7.5 Free for Linux** kernel can be installed and run properly:

- ***libc.so.6 (Linux)***

b) DAZUKO Kernel Module

The DAZUKO kernel module is necessary for the proper function of **AVG 7.5 Free for Linux** on-access scanner. Please use the latest stable version of DAZUKO - available for free at http://www.dazuko.org (see chapter 5.3 On-access Scanner for detailed information on this topic).

2.2. Additional Prerequisites for the Graphical User Interface

a) Python Language Interpreter

In order to ensure the graphical user interface will be available, verify that the system is provided with the Python language interpreter. Python versions 2.2 and higher are currently supported. You can check your Python version using the ***python -V*** command in your terminal. In most current Linux distributions the Python language interpreter is included by default. If this is not the case, you will have to download the required version for free from http://www.python.org and install it following the instructions included in the installation package for your Linux distribution.

b) Python Modules

The **AVG 7.5 Free for Linux** graphical user interface is implemented using PyGTK widgets: verify that the system is provided with the PyGTK Python module; versions 2.0 and higher are currently supported. Also, the libglade and pygtk-libglade libraries versions 2.0 and higher must be installed on your computer. Again, all these modules and libraries are standard parts of most current Linux distributions. If you do not have the required PyGTK module or pygtk-libglade library version, you can download them from http://www.pygtk.org for free and install them, following the instructions included in the installation package for your Linux distribution. The libglade library can be downloaded and installed in the same manner from http://glade.gnome.org.

2.3. Installation Package

AVG 7.5 Free for Linux installation packages are available on the installation CD in the form of RPM or deb packages for various Linux distributions. You can also download the latest appropriate package version from http://www.avg.com, ***Download/Programs*** section.

3. Installation and Launch

The **AVG Free for Linux/FreeBSD** installation packages are provided in the form of RPM files for Linux/FreeBSD distributions supporting the RPM Package Manager utility.

- For installation from the RPM file, use the following command in your shell (accessible for example using the *xterm* application within your X window system).

```
# rpm -i avg75afl(distribution)-r{release}-a{vdb
version}.i386.rpm
```

- For installation from the .deb file, use the following command in your shell (accessible for example using the *xterm* application within your X window system).

```
# dpkg -i avg75fld-r{release}-a{vdb version}.i386.deb
```

Note: *The program files of the* **AVG 7.5 Free for Linux** *versions 11 and older are installed into the* ***/usr/local/lib/avg7*** *directory. Even if you perform the full update of older version of your* ***AVG****, the directory structure remains the same (ensuring the backwards compatibility). However, all essential components of* **AVG 7.5 Free for Linux** *are always updated properly to offer you the maximum security and reliability.*

The versions 12 and newer are comprehensively installed into the ***/opt/grisoft*** *directory. Symbolic links are created in various system directories, leading to the* ***/opt/grisoft*** *directory subtree. If you want to upgrade the old directory structure, you must completely reinstall your* **AVG 7.5 Free for Linux***. Note that in this documentation is always described the preferred newer location of* **AVG 7.5 Free for Linux** *installation!*

In the installation packages' names:

- the ***distribution*** stands for the linux distribution used (see 3.1 Distributions Currently Supported)
- the ***release*** stands for the minor version number of **AVG 7.5 Free for Linux.**
- the ***vdb_version*** string stands for the **AVG 7.5 Free for Linux** internal virus database specification number.

3.1. Distributions Currently Supported

Distribution	Installation package
Mandrake Linux, Mandriva	***avg75flm-r{version}-a{version of avi}.i386.rpm***
Red Hat, Fedora Core, Red Flag	***avg75flr-r{version}-a{version of avi}.i386.rpm***
SuSE	***avg75fls-r{version}-a{version of avi}.i386.rpm***

Debian, Ubuntu, and other distributions using the Debian packaging system	***avg75fld-r{version}-a{version of avi}.i386.deb***

3.2. The Installation Process

The installation process will automatically determine all features of your system and will perform the proper installation of **AVG 7.5 Free for Linux** on your computer. Performing installation from the packages mentioned in the table above also installs the **AVG 7.5 Free for Linux** command line modules.

(See section 5 Standalone Command Line Modules for detailed information on this topic).

At the end of the installation, you will be prompted to enter some additional license information to ensure that it will be correctly displayed in the graphical user interface. Launch the following script in your shell:

 # /opt/grisoft/avggui/bin/avggui_update_licinfo.sh

You have to run this script as root. To find out whether you are logged in as root use the command

$ whoami

If the answer is 'root', everything is all right. If not, use the

$ su

command and apply the superuser password to change your identity to the root.

Note: *The fact you are logged in as root is usually indicated by the '#' character at the beginning of your prompt. Normal user identity is indicated by the '$' character.*

3.3. Product Registration

After the installation process you need to register your **AVG 7.5 Free for Linux** unless it has been registered already during the installation process; this applies to special packages for **AVG 7.5 Free for Linux** vendor partners.

The registration can be performed by launching one of the following commands in your shell *(see chapter 5.1 AVGSCAN Command for more details).*

```
$ avgscan -register

$ avgscan -register <your license number>
```

`Alternatively`, the registration can be performed using the graphical user interface as root (see chapter 4.4.5 License).

3.4. Installation of GUI from a Specific Package:

The graphical user interface (GUI) can be installed from specific packages, found at http://www.avg.com, ***Download / Programs*** section. (RPM, deb packages are available).

If your distribution supports RPM installation, you can install the GUI from the RPM package. Choose the package (string ***distribution***) appropriate for your distribution. Download the latest rpm and install it:

```
# rpm -i avggui-1.0-{release}_{distribution}.i386.rpm
```

For installation from deb package (i.e. on Debian and Ubuntu distributions): Download latest package and install it:

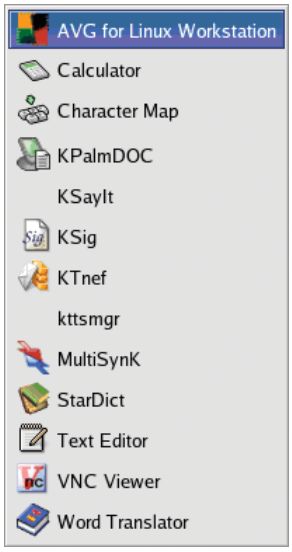
```
# dpkg -i avggui-1.0-{release}.i386.deb
```

Launch the ***/opt/grisoft/avggui/bin/avggui_update_licinfo.sh*** script as root for updating license information after installation.

Note: *You can configure PAM authentication (used in avggui run by a non-root user when changing license information) in the file /etc/pam.d/avggui.*

3.5. Launching AVG Free for Linux / FreeBSD

In the **GNOME** 2.x or **KDE** 3.x.x versions of these popular graphical desktop environments, you should see an **AVG Free for Linux / FreeBSD** icon in the menu after proper installation (an example screenshot from the KDE menu):



Click on the icon to launch the **AVG Free for Linux / FreeBSD** graphical user interface.

To launch **AVG Free for Linux / FreeBSD** from the command line, execute the

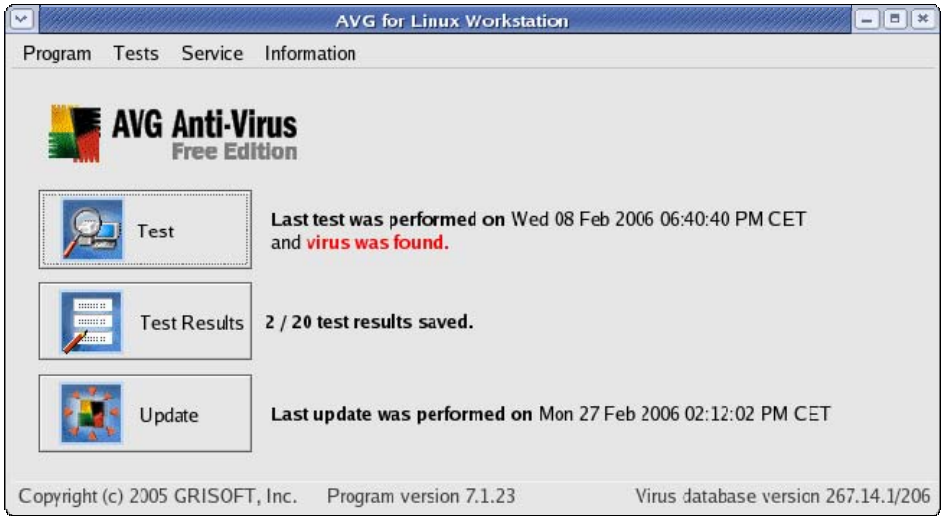
$ avggui

command.

4. Graphical User Interface

4.1. Introduction to the GUI

The item **AVG 7.5 Free for Linux** should be added into your desktop menu system automatically during installation. Its location depends on the distribution used and your desktop environment. It is also possible to run it from the console with the command ***avggui***. After launching the program, the following window will be displayed:



4.1.1. Top Menu

There are four folders in the application's top menu:

a) Program Folder

- ***Quit*** item – closes the application.

b) Tests Folder

- ***Run test*** item - launches the on-demand file system anti-virus scan (see chapter 4.2 Testing for details on testing).
- ***Test results*** item - opens the **AVG 7.5 Free for Linux – Test Results Viewer** window *(see chapter 4.3 Test Results for details on test results).*

c) Service Folder

- ***Program settings*** item - opens the **AVG 7.5 Free for Linux – Properties** window *(see chapter 4.4 Program Settings for details on configuration options).*
- ***Update*** item - launches the **AVG** update *(see chapter 4.5 Program Updates*

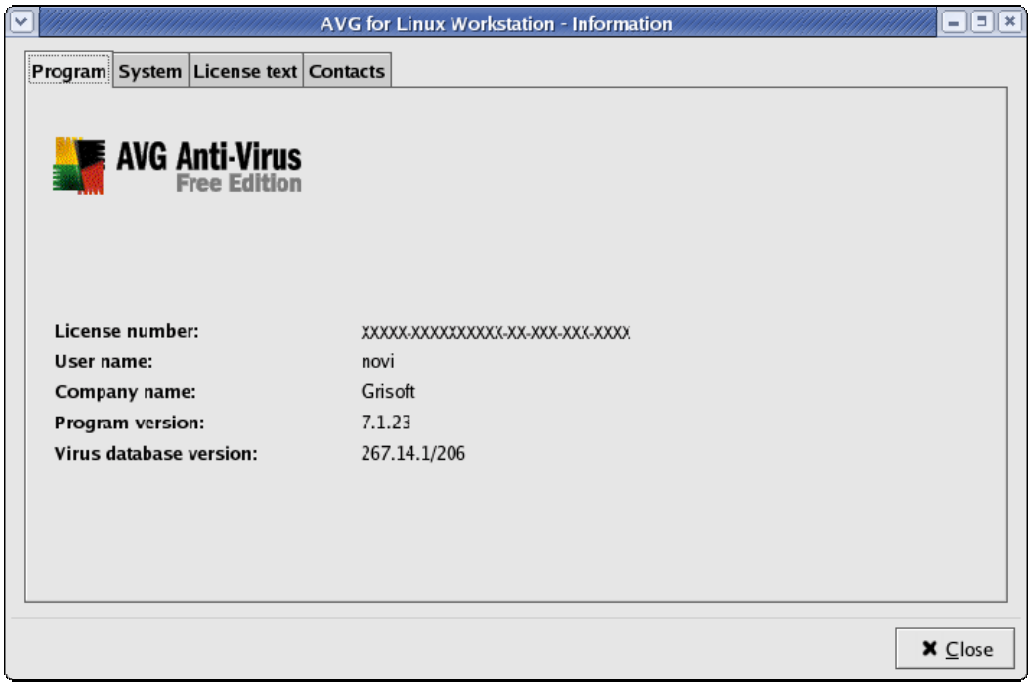
Anti-virus systems can guarantee reliable protection only if they are updated regularly. **AVG 7.5 Free for Linux** provides a reliable and fast update service with quick response times. The update process can be fully controlled also from **AVG 7.5 Free for Linux.**

Currently the graphical user interface update feature only covers the updating of virus/malware definition files. It does not include updates to the graphical user interface. However, for non experienced Linux user it is much more comfortable to perform an update using the graphical user interface, instead of running an update with the avgupdate command line module.

- *for details on updates).*

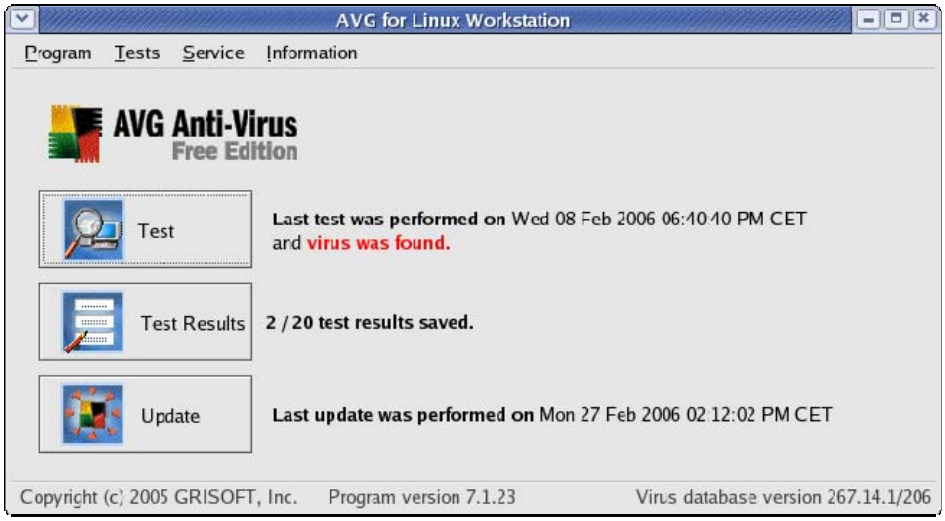
d) Information Folder

- ***About AVG*** item - opens the ***Information*** window with the four tabs:
  - ***Program*** tab - displays information about the License number, User name, Company name, and **AVG** Program and Virus database versions
  - ***System*** tab - displays the current user name and various system information
  - ***License text*** tab - displays the full wording of the **AVG** License Agreement
  - ***Contacts*** tab - displays contact information to AVG worldwide and regional partners



4.1.2. Main Panel

Below the application's top menu there is the main panel with shortcut buttons for the most commonly performed actions:



a) Test Button

The ***Test*** button launches the on-demand file system scan. The text description provides information on the most recently performed test.

b) Test Results Button

The ***Test Results*** button opens the **AVG 7.5 Free for Linux – Test Results Viewer** window. Presented next to the button you will find the number of currently saved test results.

c) Update Button

The ***Update*** button launches the on-demand update process. Information on the last update performed is provided next to the button.

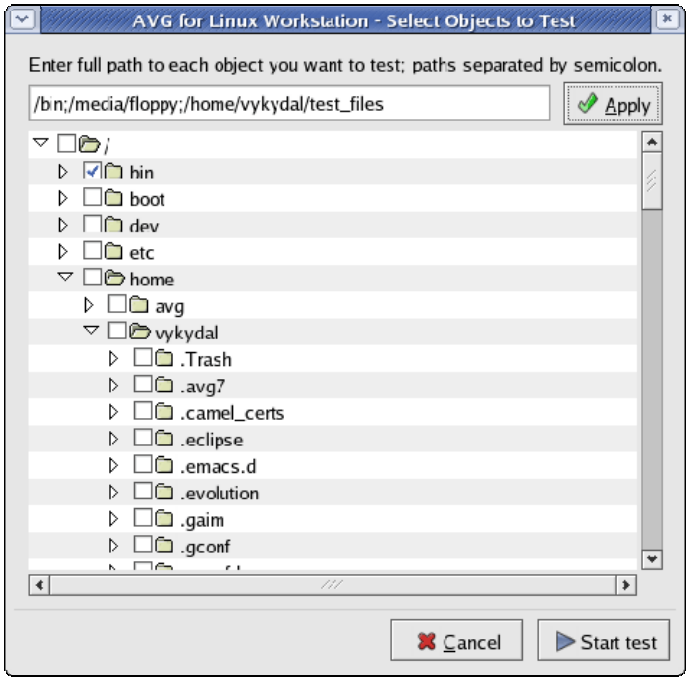
4.1.3. Bottom Section

At the very bottom of the application's main window you can find three fields with the AVG copyright info, the current **AVG 7.5 Free for Linux** program version, and the current **AVG** internal virus database version.

4.2. Testing

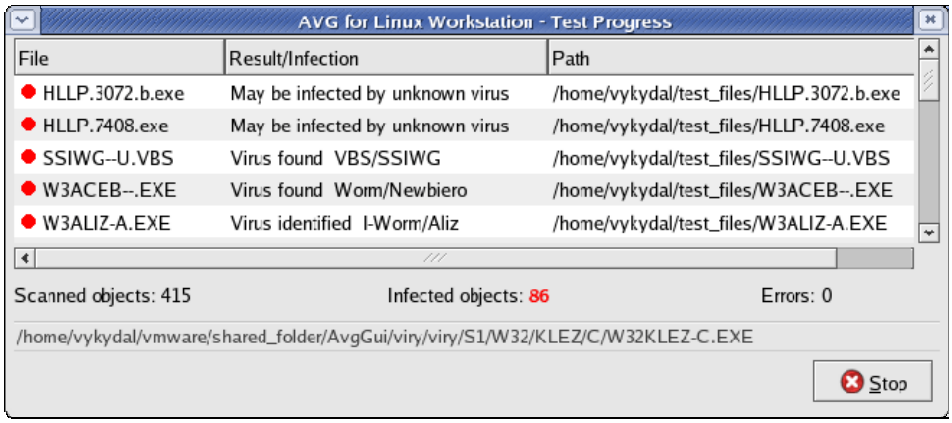
a) Testing Interface

On-demand tests can be run using the shortcut ***Test*** button on the application's main panel, or from the ***Tests*** folder in the top menu. The following window opens:



Select the locations to be scanned in the file system tree or enter the full paths into the upper text field. Press the ***Apply*** button to include the selected paths into the test. To run the test press the ***Start test*** button.

b) Test Progress



The test progress will be displayed in the following **Test progress** window; there are three main sections within this dialog window:

- ***File*** – identification of the object
- ***Result / Infection*** – information on the test result and/or infection relating to the given object
- ***Path*** – full path of the given object

Note: *Clicking on continuously scrolling list of reports stops the scrolling. Dragging the vertical scrollbar to the bottom sets the scrolling on again.*

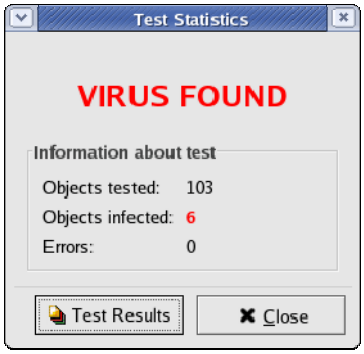
Press the ***Stop*** button to interrupt the test in progress.

c) Test Properties

The test properties can be edited within the **Test Properties** window that can be opened from the ***Service*** folder of the **AVG 7.5 Free for Linux** top menu *(see chapter 4.4 Program Settings for detailed information on test settings).*

d) Test Results Info

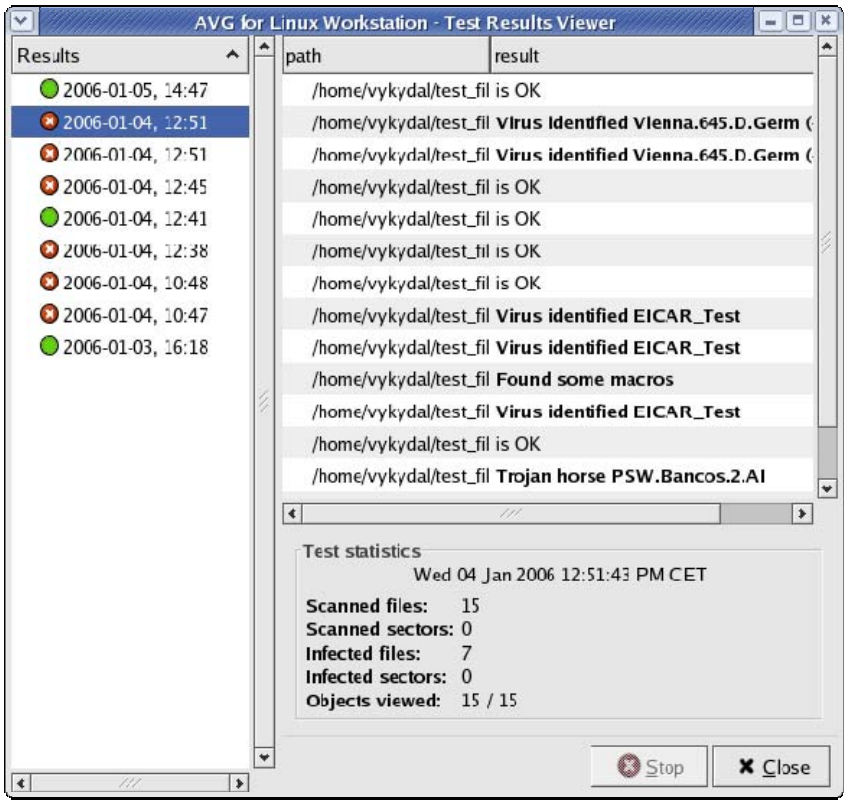
After the test has been completed (or interrupted by the user), a window with brief information on the test results will be displayed *(see chapter 4.3 Test Results for detailed information).*



e) Test Schedule

It is also possible to schedule a test to be performed automatically *(see chapter 4.4.2 Scheduler for detailed information on the Scheduler features).*

4.3. Test Results



The **AVG 7.5 Free for Linux – Test Results Viewer** window can be opened using the shortcut button on the application's main panel, or from the ***Tests*** folder of the top menu:

A list of particular test results is given in the left panel of this window (the list can be sorted date ascending/descending). Each item is accompanied with the test timestamp. Click on an item in this list to display the test results in the right panel of the **AVG 7.5 Free for Linux – Test Results Viewer** window. There are two fields for each item:

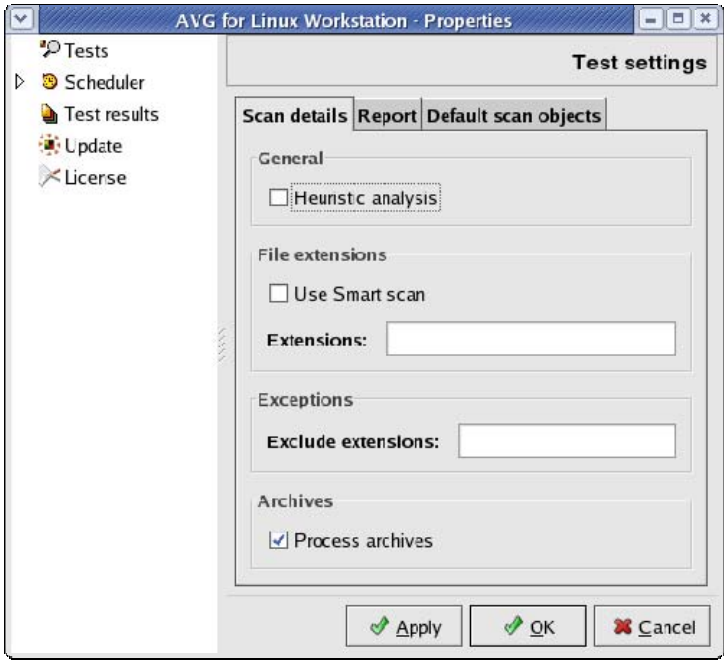
- ***Path*** – full path to the related file
- ***Result*** – short description of the respective result (e.g. 'is OK', 'Virus identified VIRUS NAME' or 'Cannot open; not checked! Permission denied'). By right-clicking on the listed item a context menu will be displayed with the option to delete the selected result.

In the bottom section of the **AVG 7.5 Free for Linux – Test Results Viewer** window, you can overview the ***Test statistics*** providing information on the date and time of the test launch, the number of scanned and infected files, and the number of scanned and infected sectors. You can check also the progress of the scanning within the ***Objects viewed*** field that shows how many items *have been* processed and the overall number of items *to be* processed.

Pressing the ***Stop*** button below the ***Test statistics*** field will interrupt the results display (useful for especially long test results messages).

4.4. Program Settings

The configuration window **AVG 7.5 Free for Linux – Properties** can be opened from the ***Service*** folder of the top menu:



In the window's left section you can see the control tree with the following branches:

- Test
- Scheduler
- Test results
- Update
- License

Select a section to display and configure the settings options in the window's right panel.

The dialog window also provides three control buttons:

- ***Apply*** – to save all configuration changes
- ***OK*** – to confirm all changes
- ***Cancel*** - to close the window without applying the configuration changes

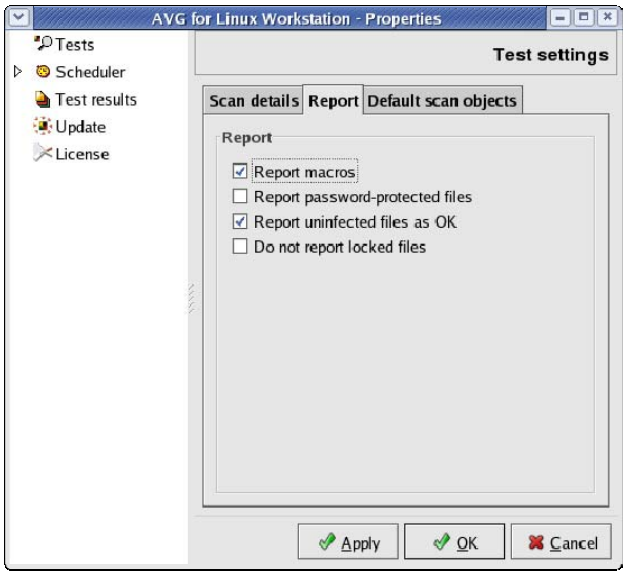
4.4.1. Tests

a) Scan Details Tab

Configure the test scanning performance settings in four sections:

- ***General*** - heuristic analysis can be switched on/off
- ***File extensions*** - specific file extension masks can be selected for scanning, and the **AVG** engine Smart scan feature can be enabled/disabled here; smart scanning means that the files are scanned not only according to the specified extensions but also according to their physical content (possibly dangerous internal code structures) no matter what extension they have
- ***Exceptions*** - files with extensions defined in this section will be excluded from scanning
- ***Archives*** - archives processing can be switched on/off in the group

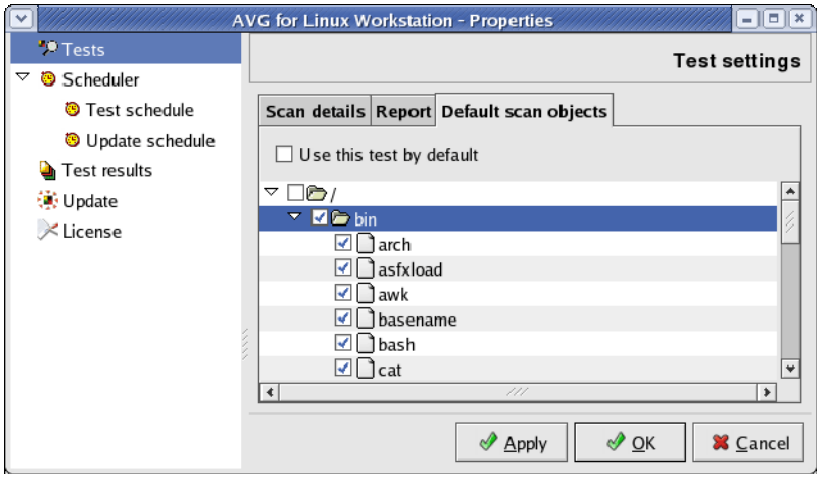
b) Report Tab



Switch on/off the reporting of various events encountered during the scan. These reports are written to the file containing specific test results.

c) Default Scan Objects Tab

Select locations and objects to be scanned by default. The objects and paths can be selected from the file system tree:



When you select the ***Use this test by default*** option, the objects and locations selected in this window will be scanned whenever the on-demand test is run. This means that no **AVG 7.5 Free for Linux – Select Objects to Test** window will open after the test launch.

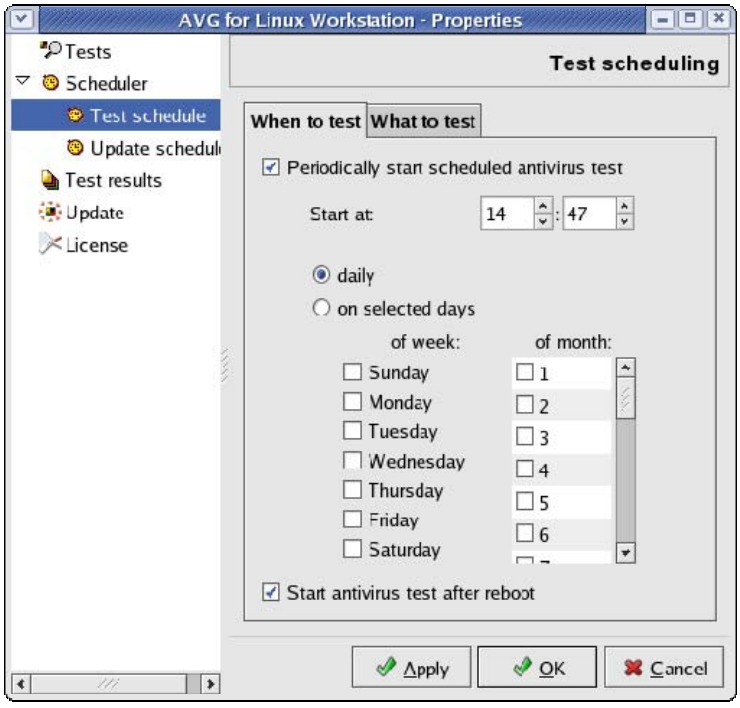
4.4.2. Scheduler

You can also schedule tests and updates to be performed automatically at specified times.

a) Test Schedule

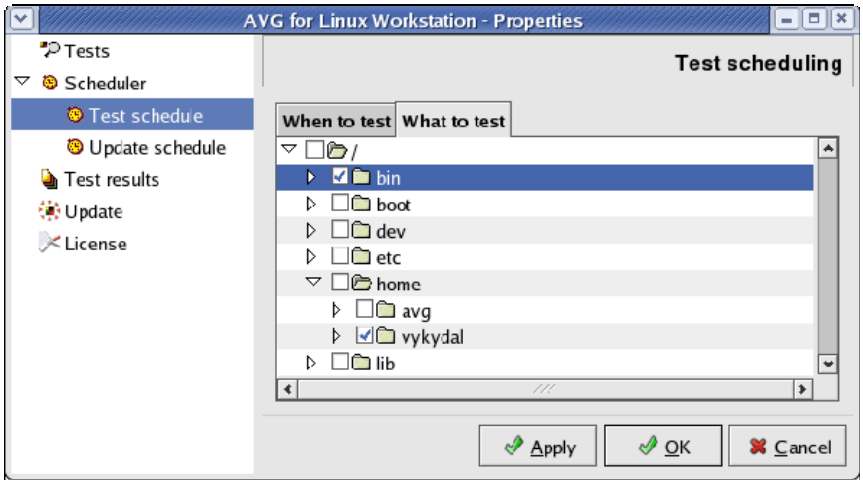
Two tabs are displayed within the ***Test schedule*** branch:

- ***When to test*** tab – switch on/off periodic tests, and select time when the test will be launched:



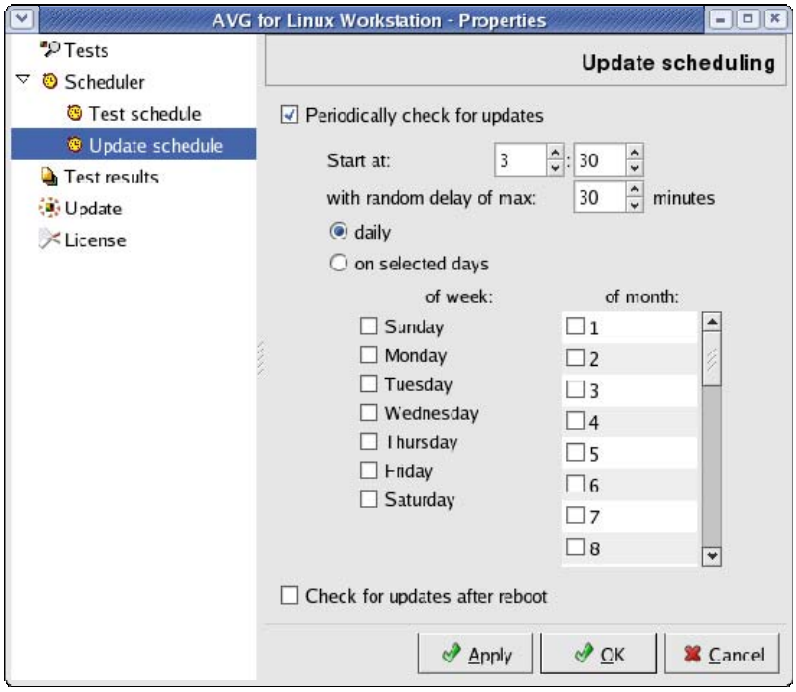
You can select whether you want to perform tests ***daily*** or ***on selected days*** using the respective options. When selecting the latter option, you can choose on what days of week or month exactly you want the tests to be executed then. The day-time is defined using the ***Start at*** field for both options.

- ***What to test*** tab – select the objects and locations to be tested:



b) Update Schedule

Switch on/off periodic check for Internet updates, and select time when an update will be performed:

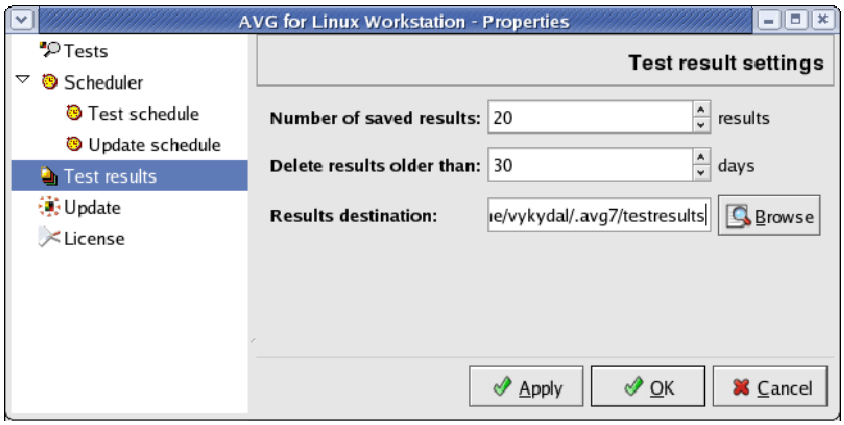


You can select whether you want to perform updates ***daily*** or ***on selected days*** using the respective options. When selecting the latter option, you can choose on what days of week or month exactly you want the updates to be executed then. The day-time is defined using the ***Start at*** field for both options.

You can also set the time of ***random delay*** (in minutes) of update execution – this is useful for example in cases when the update source is not responding for some time.

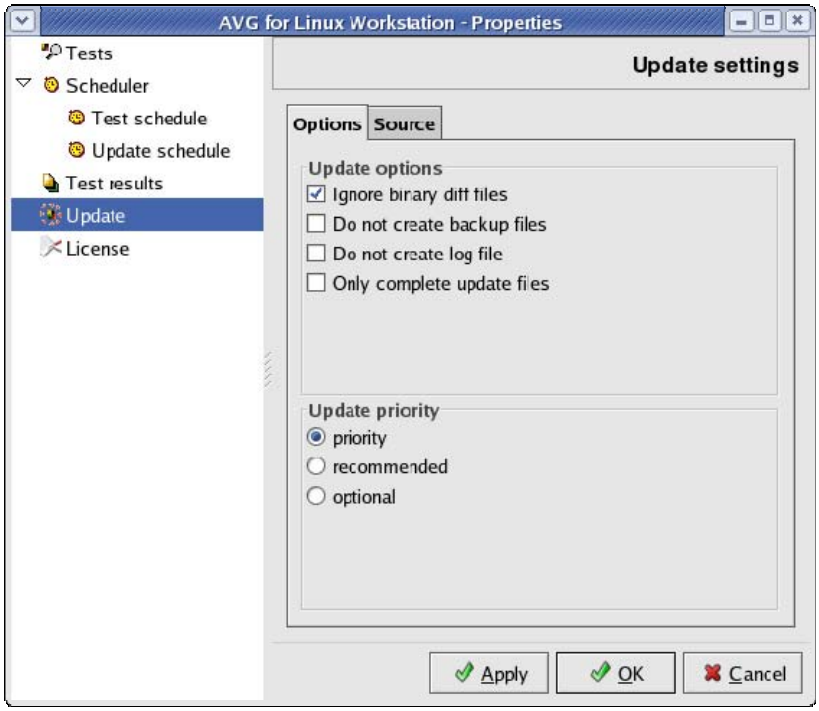
4.4.3. Test Results

- ***Number of saved results*** - specify the number of results to be saved
- ***Delete results older than*** - define for how long the test results should be saved before they are deleted
- ***Results destination*** – specify the test results file location or select the location using the ***Browse*** button



4.4.4. Update

a) ***Options*** tab – In this section you can configure various update options (such as creating log files, restarting the **AVG 7.5 Free for Linux** daemons, etc.). It is also possible to indicate the desired update priority level:



The update options are:

- ***Ignore binary diff files*** – even when smaller binary diff files are available, only the full update files will be downloaded; this option can be useful when some parts of your **AVG 7.5 Free for Linux** installation are corrupted or missing
- ***Do not create backup files*** – when selected, the update process will not create backups of older files
- ***Do not create log file*** – no log file describing the update process will be created when this option is selected

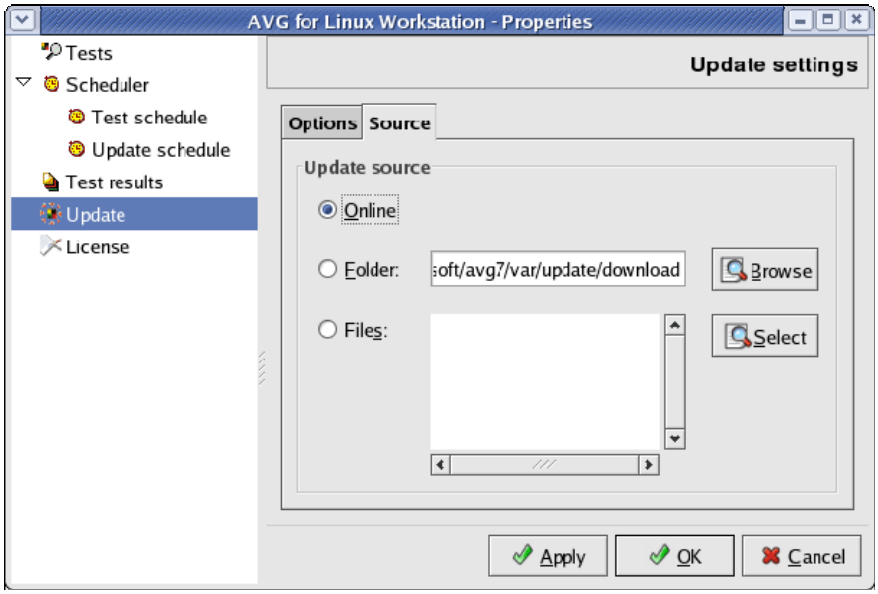
  (By default, the log file is stored as /opt/grisoft/avg7/var/update/log/avg7upd.log)

- ***Only complete update files*** – select this option when your **AVG 7.5 Free for Linux** installation is seriously damaged; you can perform a repair of your **AVG 7.5 Free for Linux** this way

The priority levels are:

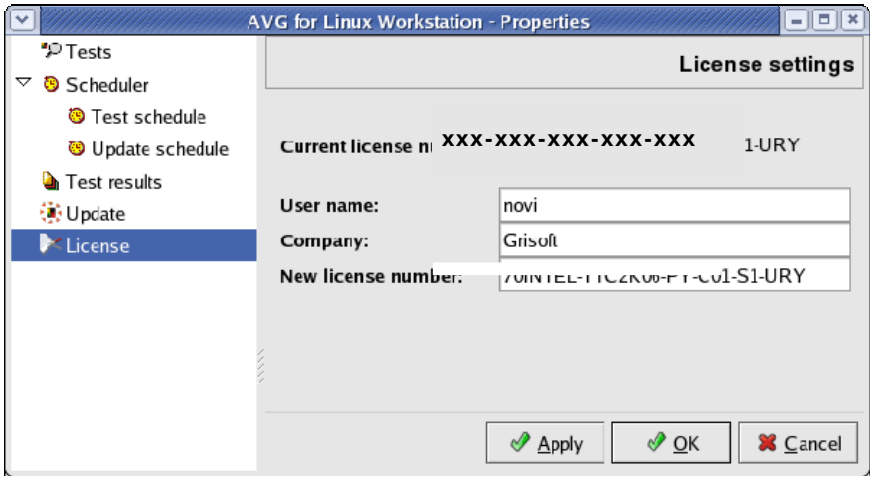
- priority
- recommended
- optional

b) ***Source*** tab – In this section you can configure various update options (such as creating log files). The ***Source*** tab allows you to define where the update files should be taken from: the Internet, a specified folder, or from defined files (*see chapter 4.5 Program Updates for additional information on the updates in general, and on priority levels).*

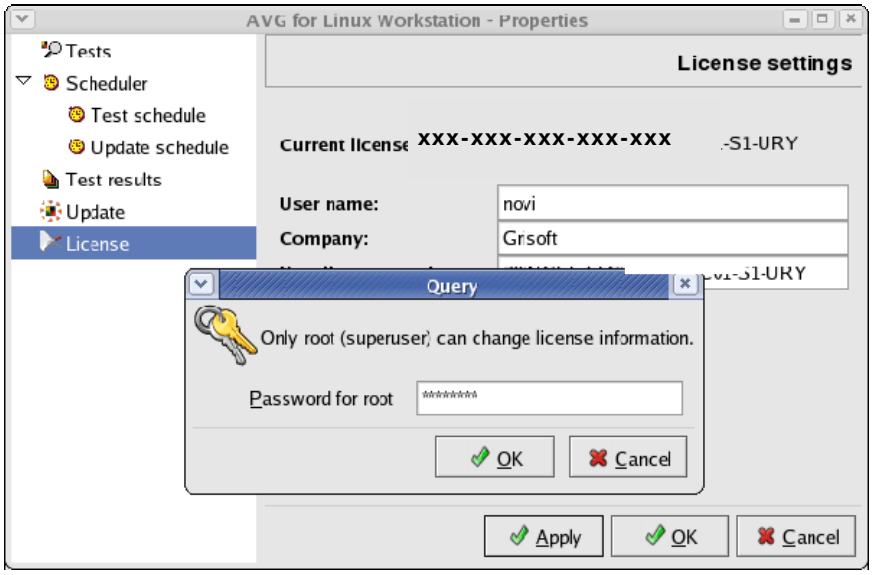


4.4.5. License

Enter the license information (***User name***, ***Company*** and ***New license number***) here. Entering a new license number is required when upgrading your **AVG 7.5 Free for Linux** installation, or reactivating the expired license:



If you are not running the **AVG 7.5 Free for Linux** as the root, you will be asked for the root password first (see the following screen):



4.5. Program Updates

Anti-virus systems can guarantee reliable protection only if they are updated regularly. **AVG 7.5 Free for Linux** provides a reliable and fast update service with quick response times. The update process can be fully controlled also from **AVG 7.5 Free for Linux**.

Currently the graphical user interface update feature only covers the updating of virus/malware definition files. It does not include updates to the graphical user interface. However, for non experienced Linux user it is much more comfortable to perform an update using the graphical user interface, instead of running an update with the avgupdate command line module.

4.5.1. Update Priority Levels

AVG offers three update levels:

- ***Priority update***

The priority update contains changes necessary for a reliable anti-virus protection. Typically, these are important virus definition updates. These updates should be applied as soon as they are available.

- ***Recommended update***

The recommended update contains various program changes, fixes and improvements.

- ***Optional update***

The optional update reflects changes that are not necessary for program functionality – texts, updates of the setup component, etc. Optional updates can be downloaded and applied together with recommended updates but the timeliness of implementing them is not urgent.

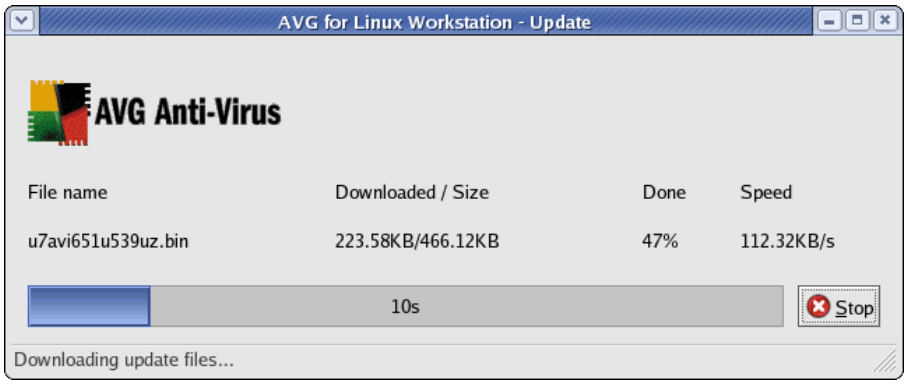
When scheduling an update, it is possible to select which priority level should be downloaded and applied. Update levels of lower importance automatically include more critical ones *(see section* 4.4.4 Update *for more information)*.

4.5.2. Performing an Update

Two types of an update are distinguished within **AVG 7.5 Free for Linux**:

a) On demand update

The on demand update is an immediate program update that can be performed any time the need arises. You can start it by pressing the ***Update*** button in the **AVG 7.5 Free for Linux** main panel; or from the ***Service*** folder of the top menu. Having launched the on demand update, you will be able to see the following screen:

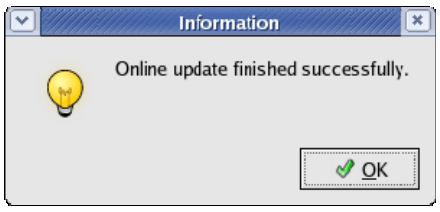


The screen brings information on:

- ***File name*** – the name of the file being currently downloaded
- ***Downloaded/Size*** – the first item shows the amount of currently downloaded data; the second one the size of the file being currently downloaded
- ***Done*** – download percentage indicator
- ***Speed*** – the current download speed

Also, you are able to review the download progress in the download progress bar. You can interrupt the download by pressing the ***Stop*** button. In the bottom area of the update window there is a field showing brief text information on the action being performed by the update process.

Once the update is finished, the following window appears showing information on the performed update:



b) Scheduled update

Within **AVG 7.5 Free for Linux** it is also possible to define an update plan. The planned update is then performed periodically according to the configuration settings. An update can be scheduled in the ***Update Scheduling*** branch of the **Properties** window.

You can review the performed update information in the update log file ***avg7upd.log*** that is to be found in the ***opt/grisoft/avg7/var/update/log*** directory (see chapter 4.4.4 Update for detailed information on the scheduled update settings).

5. Standalone Command Line Modules

As a part of the **AVG 7.5 Free for Linux** internal structure, several command line configurable and executable modules are included in the installation package. Although all the essential **AVG 7.5 Free for Linux** features can be easily controlled using the graphical user interface, some details can be exploited only from the command line, or configured only in the **AVG 7.5 Free for Linux** configuration file.

Note: *The command line modules are designed for proficient Linux system users with strong command line and console interfaces experience! However, these modules offer ultimate configuration and scanning options useful especially for system administrators.*

5.1. AVGSCAN Command

The ***avgscan*** command is intended to perform various on-demand tests. Its performance is comprehensively controlled by the command line parameters. The general syntax of the command is

$ avgscan [options] [path|paths]

The ***[path|paths]*** string stands for a single path or multiple paths to be scanned. The multiple paths are given in a list separated by the space character; a single object can be also given to be processed by the scanner. When no options are specified, a generic scan is performed for the given path(s).

Note: *Although the* ***avgscan*** *command itself can manage only the on-demand test, you can also use it to create scheduled tests by incorporating the* ***cron*** *Linux system utility. See the manual pages (man [cron|crontab]) or the respective documentation for detailed information.*

The options for the ***avgscan*** command and their descriptions are given in the following table:

Parameter	Description
-scan	Simple generic scan of the given objects and/or locations.
-heur	Switches on the heuristic analysis.
-exclude [PATH|PATHS]	Excludes a particular path or paths from the scan; the path(s) to be excluded must be given right after this option, and separated by the space character.
-@ FILE	Specifies the command file with parameters to be processed by the ***avgscan*** program; the file name must be given right after this option, and separated by the space character.

Parameter	**Description**
-ext=<ext_mask>	Explicit specification of file extensions to be scanned in the form of *-ext=<ext_mask>*, where the *<ext_mask>* string stands for the extension definition (for example "*", "jpg" , etc.). When entering multiple file extensions, they should be separated by a semicolon.
-noext=<ext_mask>	Explicit specification of file extensions not to be scanned in the form of *-noext=<ext_mask>*, where the *<ext_mask>* string stands for the extension definition (for example "*", "jpg", etc.).
-smart	Switches on the smart scan testing feature.
-arc	Switches on scanning of archives (common archive file types like ZIP, GZIP, BZIP2 and others are supported).
-rt	Switches on scanning of run-time compressed objects.
-clean	Switches on the automatic healing of infected files.
-arcw	Reports archives encountered during scanning.
-rtw	Reports run-time compressions encountered during scanning.
-macrow	Reports macros encountered during scanning.
-pwdw	Reports password-protected files encountered during scanning.
-changew	Reports changes encountered during scanning.
-ignlocked	Makes the scanner ignore locked files.
-register [LICENSE]	Registers **AVG 7.5 Free for Linux.** It is necessary to enter the valid license number either on the command line right after the *-register* option (separated by the space character), or later when prompted after the command execution without license given on the command line.

Parameter	Description
-report FILE	Reports messages about the test progress and results to the specified file; the file name must be given right after this option, and separated by the space character; when the specified file already exists, it will be overwritten.
-repappend FILE	Reports messages about the test progress and results to the specified file; the file name must be given right after this option, and separated by the space character; in reverse to the previous option, an existing file can be used to append the information to the end of the file; when a new file is specified, it will be created.
-repok	Switches on reporting of uninfected files 'is OK'.
-stoplevel N	Pauses when an erroneous state is encountered during scanning. Requires the integer argument N defining the internal code of a state in which the scan shall be paused.
-h, --help	Prints a brief overview of the program's options and usage.
-pup	Results in the detection of "potentially unwanted programs" within the scanning. Potentially unwanted program can be for example spy-ware or other possibly insecure programs.

Note: *If you launch the* ***avgscan*** *command with the* ***–clean*** *parameter,* ***AVG*** *will attempt to heal all infected files automatically. When the healing is successful, a* ***$VAULT$.AVG*** *folder is created (unless it exists already) in the home directory of the user who performed the test. The infected files are moved into this directory then, whereas the cleaned files remain in their original locations. Note the infected files are stored in a special* ***AVG*** *format, ensuring they are absolutely harmless for your system!*

Return values of ***avgscan*** program are:

- 0 – no errors
- 1 – the test was interrupted by user
- 2 – an error occurred during the test (e.g. cannot open file event)
- 3 – file system changes detected
- 4 – a suspect object found by heuristic analysis
- 5 – a virus found by heuristic analysis
- 6 – a particular virus was found
- 7 – an active virus found in memory
- 8 – corruption of some of the **AVG 7.5 Free for Linux** command line components

- 10 – an archive contains password protected files

5.1.1. Example Usage

Some typical examples of ***avgscan*** use with brief explanations follow:

```
$ avgscan /home/user
```

scans the ***user***'s home directory

```
$ avgscan -heur /home/user
```

scans the ***user***'s home directory using heuristic analysis

```
$ avgscan /home/user/bin/run_something.sh
```

scans the single file ***run_something.sh*** in the ***bin*** directory of ***user***'s home

```
$ avgscan -repok /home/user
```

scans ***user***'s home directory, reporting uninfected files as OK

```
$ avgscan -report ~/reports/report001.avg /home/user
```

scans the ***user***'s home directory and reports the test results into the file ***report001.avg*** in the ***reports*** directory in the actual user's home

```
$ avgscan -repappend ~/reports/report001.avg /home/user
```

scans the ***user***'s home directory and appends the test results to the file ***report001.avg*** in the ***reports*** directory in the actual user's home

```
$ avgscan -arc -repok /home/user
```

scans the ***user***'s home directory including archives, reporting uninfected files as OK

```
$ avgscan -ext=* -rt -arc -heur /home
```

scans the files with any extension in the ***/home*** directory, including the run time compressions and archives

Note: *For online help on the* ***avgscan*** *command type the following in your shell.*

```
$ man -l /opt/grisoft/avg7/man/man1/avgscan.1.gz
```

5.2. AVGUPDATE Command

Anti-virus systems can guarantee reliable protection only if they are updated regularly. **AVG 7.5 Free for Linux** provides a reliable and fast update service with quick response times via the ***avgupdate*** command line utility.

AVG offers three different update levels (update levels of lower importance automatically include more critical ones):

- **Priority update**

  The priority update contains changes necessary for reliable anti-virus protection. Typically, these are important virus definition updates. These updates should be applied as soon as they are available.

- **Recommended update**

  The recommended update contains various program changes, fixes and improvements.

- **Optional update**

  The optional update reflects changes that are not necessary for program functionality – texts, updates of the setup component, etc. Optional updates can be downloaded and applied together with recommended updates but the timeliness of implementing them is not urgent.

The ***avgupdate*** command is a tool for complex control over the on-demand update process. The update in general can be performed by launching this command. The update properties are controlled using the command options, which are listed in the table below. General syntax of the command is:

```
$ avgupdate [options] [path|list]
```

The ***[path|list]*** string stands for the path of the explicitly given update files (or for the list of these update files separated by the space character).

Note: *Although the* ***avgupdate*** *command itself can manage only the on-demand update, you can also use it to create scheduled updates by incorporating the* ***cron*** *Linux system utility. See the manual pages (man [cron|crontab]) or the respective documentation for detailed information.*

The options for the ***avgupdate*** command are described in the following table:

Parameter	**Description**
-o, --online	Performs an online update from the Internet; the location where the update files are downloaded from is specified in the **AVG** configuration file. (See section 6 Configuration File for detailed information.).
-f, --offline	Performs an offline update from the location specified in the given ***path*** or ***list*** (as described in the beginning of this paragraph).
-s, --antispam	Update the Anti-Spam database by sending a command to the AVG daemon. AVG daemon downloads new Anti-Spam database and reloads it for running daemons.

Parameter	Description
-d, --download	Only downloads update files without applying them; the download directory is specified in the **AVG** configuration file. *(See section* 6 Configuration File *for detailed information.)*
-p, --priority NUM	Specifies the priority of an update explicitly; the possible priority numbers are: 2 – priority update 3 – recommended update 4 – optional update
-c, --config FILE	Forces use of a configuration file other than the default one (***/etc/avg.conf***). The filename (with the specified path if necessary) is given by the FILE argument.
-i, --no-diff	Even when smaller binary diff files are available, only the full update files will be downloaded; this option can be useful when some parts of your **AVG 7.5 Free for Linux** installation are corrupted or missing.
-b, --no-backup	When this option is selected the update process will not create backups of older files.
-n, --no-progress	***avgupdate*** does not display update progress information after selecting this option.
-l, --no-log	No log file describing the update process will be created when this option is selected (by default, the log file is stored as ***/opt/grisoft/avg7/var/update/log/avg7upd.log***).
-a, --no-daemons	When this option is selected, the **AVG 7.5 Free for Linux** daemons will not be restarted following the update; for some server systems this option can help in avoiding problems with the incorrect restart of daemons.
-m, --complete	Select this option when your **AVG 7.5 Free for Linux** installation is seriously damaged to repair it.
-r, --restore	Restores the previous version of the whole **AVG 7.5 Free for Linux** (before the last update was performed).
-v, --version	Displays the program version.

Parameter	Description
-h, --help	Prints a brief overview of the program's options and usage.

Return values of ***avgupdate*** program are:

- 0 – no errors occurred during the update
- 1 – nothing new to update
- 2 – an error occurred during the update

Some typical examples of ***avgupdate*** use with brief explanations follow:

- `$ avgupdate -o`

  the simple online update

- `$ avgupdate -f /tmp/avg/updfiles`

  performs the update from the files in the ***/tmp/avg/udpfiles*** local directory

- `$ avgupdate -o -p 4`

  performs the optional online update

- `$ avgupdate -o -c /home/user/conf/avg/avg.conf`

  performs the online update according to the configuration file ***avg.conf*** located in the ***/home/user/conf/avg/*** local directory

- `$ avgupdate -o -l -m`

  performs the online update: downloads and applies the complete update file, and writes no information into the log file

Note: *For online help on the* ***avgupdate*** *command type*

```
$ man -l /opt/grisoft/avg7/man/man1/avgupdate.1.gz
```

in your shell.

5.3. On-access Scanner

The DAZUKO kernel interface for file access control must be inserted as a module into your kernel in order to enable the on-access scanning using the **AVG 7.5 Free for Linux** engine. You can download the latest version of DAZUKO at http://www.dazuko.org. It is recommended to download the latest version available especially if you are running the kernel of major version 2.6 (or higher)!

To install the DAZUKO kernel module, follow these instructions:

a) Get your Kernel Source Code

It is highly recommended to build and install a kernel from the actual kernel sources first. Then it is certain that the kernel source code you use to build DAZUKO matches the running kernel. Many Linux distributions provide

packages with the kernel source code. If you do not plan building a completely new customized kernel, make sure you install the proper kernel source packages for your distribution.

Note: *If you do not have any experience with building the Linux kernel, you should not attempt to install DAZUKO unless you get some information and practice in hacking the Linux kernel internals!*

b) Compile DAZUKO

Once the source code for your running kernel is available, you can build DAZUKO. You can download the latest version of DAZUKO at http://www.dazuko.org. Unpack the downloaded file using the following command and switch to the unpacked directory.

```
$ tar –xvzf dazuko-{version}.tar.gz
```

Edit the ***configure*** file and change the 0 value to 1 for the ON_CLOSE_MODIFIED parameter in the MAIN section. Generate a **Makefile** by running the following command in the directory with the DAZUKO source files.

```
$ ./configure
```

This will determine the features of your system needing to be specified in the generated **Makefile**.

Then you can compile DAZUKO with the

```
$ make
```

command. This will create the device driver as well as a couple of example programs. Under Linux 2.2-2.4 the device driver is named ***dazuko.o***. Under Linux 2.6 it is named ***dazuko.ko***.

c) Insert DAZUKO

Having compiled DAZUKO successfully, the final step is to insert the module into the kernel.

Note: *The process of inserting a kernel module may vary according to the particular Linux distribution. Refer to your distribution documentation to resolve possible problems. Also, there can be some differences according to various versions of DAZUKO. Refer to the detailed DAZUKO documentation at http://www.dazuko.org*.

Create the device node for DAZUKO. This can be done executing the following command as the root, (supposing that the device major number is 254 for this example).

```
# mknod –m 600 /dev/dazuko c 254 0

# chown root:root /dev/dazuko
```

Also, you have to copy the module (the ***dazuko.o*** or ***dazuko.ko*** file) to the ***/lib/modules/src/kernel/char*** directory.

Create a link to module by adding the following line to the /etc/modules.conf file.

```
alias char-major-254 dazuko
```

Insert the module as the root by executing on of the following commands

```
# /sbin/insmod/ dazuko.o
```

or

```
#/sbin/insmod dazuko.ko
```

for Linux 2.2-2.4 or Linux 2.6 kernels respectively.

To check if the module has been loaded use the

```
$ cat /proc/modules or $ lsmod | grep dazuko
```

command. If you see 'dazuko' string along with its device major number (usually 254) in the list of modules, it is successfully installed and inserted.

Note: *If you get any warnings or error messages during the above described process, something may be wrong with your kernel source code or configuration. Please refer to the DAZUKO FAQ page at http://www.dazuko.org for detailed information and possible fixes.*

Once the DAZUKO module is installed and inserted, the **AVG 7.5 Free for Linux** daemons responsible for the on-access scanning will be fully functional. You need to make sure the daemons are running and restart them if they have been stopped (refer to the following paragraph to see how to do this).

Configuration of on-access scanning daemon(s) is done via the file /etc/avg.conf, described in chapter 5.3 On-access Scanner.

5.4. Service Signals

On-access scanning daemons are controlled within common **AVG 7.5 Free for Linux** services. The services can be comprehensively managed by sending them a signal at once via the following command (on most systems):

```
# /etc/init.d/avgd [start|stop|restart|reload|status|condrestart]
```

On Slackware use:

```
# /etc/rc.d/rc.avgd [start|stop|restart|reload|status|condrestart]
```

The options in the square brackets represent the possible signals that can be sent to the **AVG 7.5 Free for Linux** daemons:

- ***start*** – starts the daemons
- ***stop*** – stops the daemons
- ***restart*** – restarts the daemons
- ***reload*** – forces the daemons to reload the internal virus database

- ***status*** – shows the status of the daemons
- ***condrestart*** – conditionally restarts the daemons

Note: *You can only control the* **AVG 7.5 Free for Linux** *daemons as root this way!*

The on-access scanning performance can be configured using the common **AVG 7.5 Free for Linux** configuration file. (See chapter 6 Configuration File for detailed information.)

6. Configuration File

The common configuration of **AVG 7.5 Free for Linux** command line modules, e-mail scanner, and update process is covered in the ***avg.conf*** file, usually located in the ***/opt/grisoft/avg7/etc*** directory. The general syntax of the configuration file is described as follows:

```
...

# comments

[<section_name>]

<parameter_name> = <value1> <value2>

<parameter_name> = <value3> # comments

...

[<yet_another_section>]

<parameter_for_this_section> = <its_value>

...
```

The **'#'** character indicates a comment – the rest of the line following this character is ignored and will not be processed.

The square brackets ('[' and ']' characters) enclose a section name. All entries following the section specification until another section specification (or end of file) are considered as configuration options related to the respective section.

The entries for each section consist of the ***parameter name*** and its ***value*** (or ***values***) specified after the '=' character. The values can be either numeric (integer) or strings. The numeric 1/0 values usually represent enabling/disabling of the respective feature specified by the parameter name.

Multiple values for one parameter can be separated by white space characters (for example space, tabulator, etc.) or by a new line (the parameter name must be given again in this case).

If you are logged in as root, you can change the parameter values directly in the configuration file ***avg.conf*** using any plain text editor (e.g. vi, vim, pico, joe, gedit, emacs, jed, jedit, ed, …).

The configuration file consists of four sections.

6.1. AvgCommon

Configuration of the common features of **AVG 7.5 Free for Linux** memory resident services (daemons) in general:

- ***runtimeCompression*** – scanning of files with runtime compression; possible values are 0 or 1; the default value is **1** (runtime compression scanning enabled)

- ***heuristicAnalysis*** – using of heuristic analysis scanning; possible values are 0 or 1, the default value is **0** (heuristic analysis disabled)
- ***pupAnalysis*** – when set to ***1***, "potentially unwanted programs" are detected within the on-access scanning; the default is ***0*** (no detection)
- ***processesArchives*** – scanning of archives; possible values are 0 or 1; the default value is **0** (archives scanning disabled)
- ***syslogFacility*** – specification of facility used by syslog daemon (refer to the syslog.conf manual pages for detailed information on the syslog features); possible values are literal string types; the default value is ***daemon***
- ***reportPasswordProtectedFiles*** – reporting of password protected files; possible values are 0 or 1, the default value is **0** (reporting disabled)
- ***reportMacros –*** reporting of macro structures in the scanned files; possible values are 0 or 1, the default value is **0** (reporting disabled)
- ***reportLockedFiles*** – reporting of locked files; possible values are 0 or 1, the default value is **0** (reporting disabled)
- ***quarantineDirectory*** - Directory with AVG Quarantine. default value = /opt/grisoft/avg7/var/

6.2. On-Access Scanner Configuration

The main configuration for the on-access scanning daemon(s) is located in /etc/avg.conf (/usr/local/etc/rc.d/avg.conf for FreeBSD). The following can be specified:

- ***includePath*** – the list of paths to be scanned by the on-access scanner (at least one path is required); possible values are strings according to the path specification syntax; the default value is ***/mnt***
- ***excludePath*** – the list of paths to be ignored by the on-access scanner; possible values are strings according to the path specification syntax; the default value is ***/proc***
- ***numOfDaemons*** – the number of on-access scanning preforked daemons; possible values are non-negative integers from 0 to 10; the default value is ***2 (***because of possible multiple access to the same file***). S***pecifying the number as 0 will disable on-access scanning.
- ***scanOnOpen*** – scan files when they are being opened; possible values are 0 or 1; the default value is ***1*** (scan files upon opening). This is the recommended setting.
- ***scanOnClose***– scan files when they are being closed; possible values are 0 or 1; the default value is ***0*** (do not scan files upon closing).
- ***scanOnExec*** – scan files when they are being executed; possible values are 0 or 1; the default value is ***0*** (do not scan files upon executing).
- ***scanOnCloseModified*** – scan files when they are being closed if they have been modified; possible values are 0 or 1; the default value is ***1*** (scan modified files upon closing).
- ***excludeFileSuffix*** – the list of file suffixes ignored by the on-access scanner; possible values are strings according to suffix specification syntax, example values: ***.jpg .gif***; the default value is none.

- ***onVirusAction*** - specify what action to take when a virus is detected. Possible values are:

  0 - do nothing (default)

  1 - move file into quarantine

  2 - try to heal file

6.3. E-mail Scanning Configuration (AvgDaemon)

Configuration of the **AVG 7.5 Free for Linux** e-mail scanning daemon(s):

- ***port*** – port number the daemon listens on; possible values are positive integers (preferably assigned to unused ports); the default value is ***55555***
- ***unixSocketName*** – the name of the Unix socket used for the e-mail scanning daemon communication purposes; the default value is ***/tmp/avg.sock***
- ***address*** – local IP address the daemon is bound to – should be the same as the local address of your e-mail server; possible values are numerical strings according to the IP address decimal representation syntax; the default value is ***127.0.0.1***
- ***numOfDaemons*** – the number of daemons; possible values are non-negative integers, the default value is ***2***; specifying the number to 0 will disable the daemon.
- ***smtpAddress*** - Address of SMTP server used for sending notifications, in case of using of Postfix also the address of delivering queue. default value = localhost
- ***smtpPort*** - Port number of SMTP server. default value = 10025
- ***enableAntispam*** - Enable antispam engine. values: 0 - disable, 1 - enable default value = 0
- ***antispamConfigDir*** - Location of antispam configuration directory. default value = /opt/grisoft/avg7/etc/antispam
- ***spamLevel*** - Threshold defining spam score regarded as spam (genrally, lower threshold means higher spam catch rate but also higher probability of false positives, for details see antispam engine documentation). values: 1 - 99 default value: 70
- ***onVirusAction*** - Action to be taken in case of virus detection. Possible values are:
  - 0 - do nothing
  - 2 - remove infected attachment of message
  - 3 - move message into quarantine
  - 4 - drop the message
- ***onSpamAction*** - Action to be taken in case of spam detection. default value = 0. Possible values are:
  - 0 - do nothing
  - 4 - drop the message

- ***enableAttachmentFiltering*** - Turn on/off attachment filtering. Values: 0 - off, 1 - on default value = 0
- ***filterOutAllDocuments*** - Turn on/off removal of all document attachments from mail (which are by default: DO? /XL? /VBX /RTF /PP? /POT /MDA /MDB /XML). Values: 0 - off, 1 - on default value = 0
- ***filterOutAllExecutable*** - Turn on/off removal of all executable file attachments from mail. Values: 0 - off, 1 - on default value = 0
- ***filterOutAllFilesWithExtension*** - removal all attachments with the given extensions from mail (no default value). Example Values: DOC MP3
- ***enableCertification*** - Turn on/off mail certification. Values: 0 - off, 1 - on default value = 0
- ***enableVirusSubjectCertification*** - Turn on/off mail subject certification for virus. values: 0 - off, 1 - on default value = 0
- ***enableSpamSubjectCertification*** - Turn on/off mail subject certification for spam. values: 0 - off, 1 - on default value = 0
- ***virusSubjectCertifyText*** - Text value for mail subject certification for virus.
- ***spamSubjectCertifyText*** - Text value for mail subject certification for spam.
- ***enableNotification*** - Turn on/off mail notification. values: 0 - off, 1 - on default value: 0
- ***notifySender*** - Notify the original sender when virus was detected. values: 0 - no, 1 - yes default value: 0 (strongly recommended)
- ***notifyRecipients*** - Notify the original recipients when virus was detected. values: 0 - no, 1 - yes default value: 0 (recommended)
- ***notifyAddresses*** - Recipients of notification. default value: ""
- ***notifyFrom*** - Sender of notification. default value: ""
- ***notifyTemplate*** - Template file with notification text (in eml format). The following macros found in the text are expanded:
  - $FROM$ -from where the notification appears to come from
  - $RECIPIENTS$ - original mail recipients
  - $SENDER$ - original mail sender
  - $VIRUSES$ - multiline list of detected viruses

6.4. AvgUpdate

Configuration of the ***avgupdate*** module:

- ***location*** – the location where the update will be performed from; possible values are strings according to the general URL; the default value is ***http://www.avg.com/softw/70/update***
- ***proxy*** – specification of the proxy server; possible values are strings in the form of *host:port*, where *host* is the address of a proxy server (decimal or alphanumeric address notation, e.g. *192.168.100.99* or *proxy.myserver.com*) and *port* is the numeric specification of respective port; to disable the proxy server leave the default ***off*** value

- ***proxyLogin*** – specification of the proxy user, enabled only when the *proxy* option is enabled as well; possible values are strings in the form of *user:password*, for example *frog:swamp*; to disable this feature leave the default ***off*** value
- ***backupDir*** – the location of the backup directory that is used for storing the backup data before performing the update itself; possible values are strings according to the path specification syntax; the default value is ***/opt/grisoft/avg7/var/update/backup***
- ***preinstallDir*** – the location of the directory that is used for storing the update data before installing them (the directory is cleared after completing the update); possible values are strings according to the path specification syntax, the default value is

  /opt/grisoft/avg7/var/update/preinstall

- ***downloadDir*** – the location of the directory that is used for storing the downloaded update files (unless the ***avgupdate*** '***-d***' command line option is specified, the directory is cleared after finishing the update); possible values are strings according to the path specification syntax; the default value is ***/opt/grisoft/avg7/var/update/download***
- ***logFile*** – the location of the update log file; possible values are strings according to the path specification syntax; by default ***/opt/grisoft/avg7/var/update/log/avg7upd.log***
- ***logLevel*** – the update logging level; possible values are integer numbers from 1 to 3 (the default value is ***1***):
  - 1 – lowest logging level, only the update start/finish information is recorded
  - 2 – medium logging level, some more information on various update phases is recorded
  - 3 – maximum logging level, detailed information on all update phases is recorded (useful when an update fails for some unknown reason)
- ***timeout*** – specification of the maximum time the download can take (in seconds); possible values are non-negative integers; the default value is ***0*** (no limitation posed upon the downloading time)

7. AVG Quarantine

AVG quarantine is a repostiory where infected e-mails or files can be moved to for further processing (this can be set as action to be taken on virus detection in the configuration file ***/opt/grisoft/avg7/etc/avg.conf***, where the location of the quarantine can be changed too).

7.1. avgqrtctl Quarantine Control Utility

For basic management of the quarantine, there is the utility **avgqrtctl**, which enables listing (in a specified order), deleting, or restoring files from the quarantine. Files can be specified using regular expressions.

7.1.1. Usage

```
avgqrtctl -l [regexps] [-q path] [-H] [-S [F|O|V|S|C|D]]

avgqrtctl -d [regexps] [-q path] [-i]

avgqrtctl -r [regexps] [-q path] [-i]

avgqrtctl -h | -V
```

7.1.2. Options

`-l, --list regexps`	List files matching regular expressions regexps stored in quarantine. Files can be sorted using option -S and header can be set to be repeated every 25 lines using option -H. See section 7.1.3 Output for description of information printed about each listed file.
`-r, --restore regexps`	Restore files matching regular expressions regexps stored in quarantine to their original filename and destination. Existing files are overwritten quietly unless option -i is set on.
`-d, --delete regexps`	Delete files matching regular expressions regexps from quarantine. Confirmation will be required if the option -i is set on.
`-i, --interactive regexps`	Require confirmation in case of overwriting of existing file (option –r) or deleting of a file (option –d).
`-q, --qrtloc path`	Location of quarantine file.
`-S, --sort [order]`	Specify order of files listed from quarantine. Possible values of order are: – F sort by filename – O sort by original filename – V sort by virus name

	– S sort by size – C sort by file change time – D sort by time of insertion into quarantine
`-H, --headers`	When listing files from quarantine, repeat header every 25 lines.
`-V, --version`	Display avgqrtctl version.
`-h, --help`	Display command line help for avgqrtctl.

7.1.3. Output

This section describes the information avgqrtctl prints for each file listed from quarantine.

```
MODIF TIME time of last file modification

INSERT TIME time of insertion of file into quarantine

VIRUS NAME name of detected virus

FILE SIZE size of file

FILE PATH original path to file
```

8. FAQ

The FAQ section of the **AVG Free** website (http://free.avg.com) provides answers to most issues that you may encounter while using **AVG Free for Linux/FreeBSD**. Unfortunately, no technical support is available for users of any free version of AVG.