Dr.WEB®

Anti-virus
for UNIX Internet gateways

Defend what you create

Administrator Manual

Dr.Web® for Unix Internet gateways
Version 6.0.2
Administrator Manual
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Doctor Web

Doctor Web develops and distributes Dr.Web® information security solutions which provide efficient protection from malicious software and spam.

Doctor Web customers can be found among home users from all over the world and in government enterprises, small companies and nationwide corporations.

Dr.Web antivirus solutions are well known since 1992 for continuing excellence in malware detection and compliance with international information security standards. State certificates and awards received by the Dr.Web solutions, as well as the globally widespread use of our products are the best evidence of exceptional trust to the company products.

We thank all our customers for their support and devotion to the Dr.Web products!

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Introduction

This Manual describes the following anti-virus software:

- **Dr.Web® for Unix Internet gateways** for **Linux**;
- **Dr.Web® for Unix Internet gateways** for **FreeBSD**;
- **Dr.Web® for Unix Internet gateways** for **Solaris**.

As far as all these solutions for various UNIX systems differ from each other only slightly, then hereinafter all of them will be referred to as **Dr.Web for Unix Internet gateways**. Critical differences will be described in separate chapters and paragraphs.

Manual is designed for the person responsible for anti-virus protection and security ("Administrator" hereinafter).

Protection of Internet gateways in UNIX systems has three specific features:

- Examination of all incoming http-traffic for viruses, their diagnostics and neutralization.

  Viruses can be (and in most cases, they are) designed not directly for UNIX systems. Through Internet ordinary Windows viruses are distributed, including macro-viruses for Word, Excel and other office applications.

- Filtration of access to html-resources depending on their MIME type, size and host name.
- Limitation of access to internet-resources through regularly updated predefined content-specific black lists.

Dr.Web for UNIX Internet gateways solution consists of three major components and performs all three tasks mentioned above.

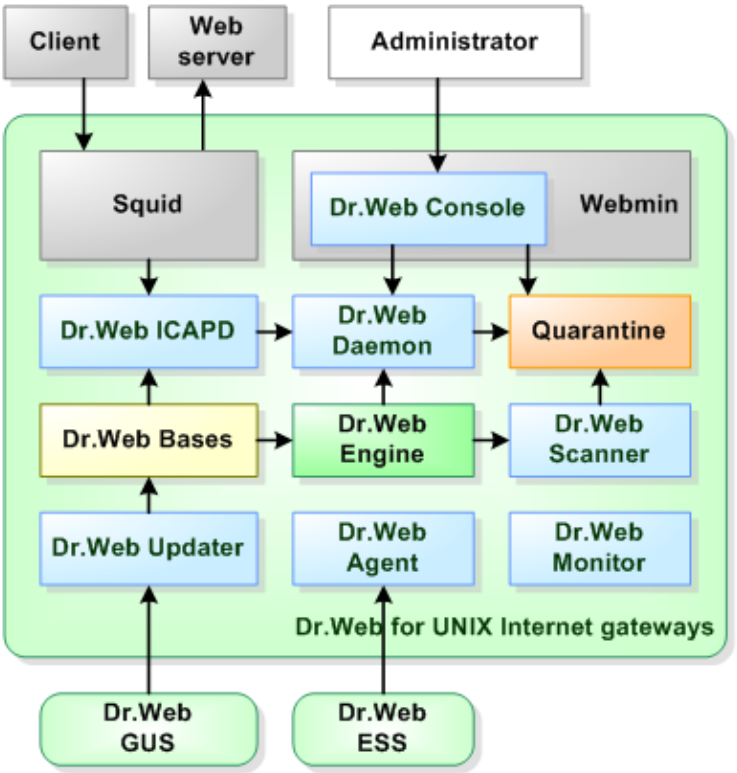
The following modules are included into the **Dr.Web for Unix Internet gateways** solution:

- **Console antivirus scanner Dr.Web Scanner** used to detect and cure viruses on the local machine and shared directories;

- **Background resident component** **Dr.Web Daemon** used as an external antivirus filter;
- **Auxiliary resident component** **Dr.Web Monitor** used to run and terminate other **Dr.Web** modules in the necessary order;
- **Component** **Dr.Web Agent** used for gathering statistical information and integration with **Dr.Web Enterprise Security Suite**;
- **Component** **Dr.Web Updater** (it is realized in the form of a Perl script) used to automatically update virus databases;
- **Component** **Dr.Web ICAP Daemon** (hereinafter **Dr.Web ICAPD**) allows to integrate other **Dr.Web** modules with HTTP/FTP-proxy server using ICAP protocol.
- **Control web interface** **Dr.Web Console for UNIX Internet Gateways** – the module which is built in the system component **Webmin**, and used for management and control **Dr.Web for Unix Internet gateways** via the web interface from any browser.

Structure of **Dr.Web for Unix Internet gateways** and its components are shown on figure below.

Figure 1. Structure of Dr.Web for Unix Internet gateways and its components



In the present manual basic steps of setup, adjustment and startup procedures of **Dr.Web for Unix Internet gateways** solution will be discussed. This manual contains information on the following topics:

- General product description;
- Installation of **Dr.Web for Unix Internet gateways** solution;
- Running **Dr.Web for Unix Internet gateways** solution;
- Usage of updating package **Dr.Web Updater**;

- Usage of **Dr.Web Agent**;
- Usage of console scanner **Dr.Web Scanner**;
- Usage of background on-demand scanner **Dr.Web Daemon**;
- Usage of **Dr.Web Monitor**;
- Usage of module **Dr.Web ICAPD**;

At the end of this Manual you will find technical support service contact information.

Doctor Web products are being constantly developed. Add-ons to virus databases are released daily or even several times a day. New versions of programs appear. Diagnostics techniques and methods of anti-virus protection, as well as integration with other applications of UNIX systems are improved regularly. Besides that, the list of applications compatible with **Doctor Web** products is constantly expanding, therefore some settings and functions described in this Manual will slightly differ from current program version. To get up-to-date program information please refer to documentation files included in delivery package.

Terms and abbreviations

This guide utilizes the following content conventions and signs:

Convention	Description
Bold	Names of buttons and other elements of the graphical user interface (GUI), and required user input that must be entered exactly as given in the guide.
Green and bold	Names of **Doctor Web** products and components.
Green and underlined	Hyperlinks to topics and web pages.
`Monospace`	Code examples, input to the command line and application output.
Italics	Placeholders which represent information that must be supplied by the user. For command-line input, it indicates parameter values.
CAPITAL LETTERS	Names of keys and key sequences.

Convention	Description
Plus sign ('+')	Indicates a combination of keys. For example, ALT+F1 means to hold down the ALT key while pressing the F1 key.
Exclamation mark	A warning about potential errors or any other important comment.

To define directories to which components of the software complex are installed, specific conventional symbols are used: `%bin_dir`, `%etc_dir` and `%var_dir`. Depending on the OS being used, these symbols refer to the following directories:

for Linux and Solaris:

```
%bin_dir = /opt/drweb/
%etc_dir = /etc/drweb/
%var_dir = /var/drweb/
```

for FreeBSD:

```
%bin_dir = /usr/local/drweb/
%etc_dir = /usr/local/etc/drweb/
%var_dir = /var/drweb/
```

The following abbreviations are used in this Manual:

Abbreviation	Description
ASCII	American Standard Code for Information Interchange
CIDR	Classless Inter-Domain Routing
DEB	Extension for package files for software distribution in **Debian** (and others used **dpkg**)
DNS	Domain Name System
HTML	HyperText Markup Language
IP	Internet Protocol
IPv4	Internet Protocol, version 4
IPv6	Internet Protocol, version 6

Abbreviation	Description
IPC	Inter-Process Communication
MD5	Message Digest 5 algorithm
OS	Operating System
PID	Process IDentifier in UNIX based OS
POSIX	Portable Operating System Interface for Unix
RFC	Request for Comments
RPM	Package files format (and extension) for **Red Hat Package Manager**
SSL	Secure Socket Layers protocol
TCP	Transmission Control Protocol
TLS	Transport Layer Security protocol
URL	Uniform Resource Locator
UUID	Unique User IDdentifier
XML	eXtensible Markup Language

The following abbreviations are used in chapters about components **Dr.Web ICAPD** and **Dr.Web Console for UNIX Internet Gateways**:

Abbreviation	Description
CGI	Common Gateway Interface
FTP	File Transfer Protocol
HTTP	HyperText Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
ICAP	Internet Content Adaptation Protocol
JSON	JavaScript Object Notation
MIME	Multipurpose Internet Mail Extensions

System requirements

Dr.Web for Unix Internet gateways is compatible with

- **Linux** distributions that meet requirements listed in Compatibility with Linux Distributions;
- **FreeBSD** version 6.x and higher for Intel x86 and amd64 platform;
- **Solaris** version 10 for Intel x86 and amd64 platform.

Used platform must be fully compatible with x86 processor architecture in 32-bit or 64-bit modes. 64-bit systems must support execution of 32-bit applications.

For example:

To enable support for 32-bit applications in systems based on **Debian**/**Ubuntu Linux** `ia32-libs` library must be installed, for systems based on **ALT Linux** `i586-glibc-core` library must be installed.

For successful operation of **Dr.Web for Unix Internet gateways** solution the following requirements must be met:

- Installed and running **Dr.Web Daemon** and anti-virus engine **Dr.Web Engine** version 6.0.2 or later.
- Installed and running **Squid** version 3.0.STABLE1 or later, or **SafeSquid** version 3.0 or later.
- **Dr.Web Updater** component is require installed **Perl** 5.8.0 or later.

Dr.Web for Unix Internet gateways hardware requirements are the same as requirements for command line interface of compatible operating system.

Installation requires 205 megabytes.

GUI installer of **Dr.Web for Unix Internet gateways** requires **X Window System**. For automatic execution of interactive

configuration script in graphical mode, **xterm** or **xvt** terminal emulator must be installed.

Also, following packages must be installed in your system:

- **base64**
- **unzip**
- **crond**

For successful installing of **Dr.Web for Unix Internet gateways** in **FreeBSD** OS (version later 8.0) library **compat7x** is required.

Depending on the range of problems to be solved by **Dr.Web for Unix Internet gateways** solution and total system load during its operation, hardware requirements may vary widely.

Compatibility with Linux Distributions

Dr.Web for Unix Internet gateways solution is compatible with x86 and x86-64 **Linux** distributions.

Requirements for versions of kernel and glibc library depend on type of the installation package:

- Universal package for UNIX systems (**Linux x86**):
  - **kernel** version 2.4.x, **glibc** version 2.2 (not recommended) and later,

  OR
  - **kernel** version 2.6.x, **glibc** version 2.3 and later;
- Universal package for UNIX systems (**Linux x86-64**):
  - **kernel** version 2.6.x, **glibc** version 2.3 (recommended) and later;
- Native RPM distribution packages (**rpm-apt**, **urpmi**, **yum**, **zypper**):
  - **kernel** version 2.6.18 and later, **glibc** version 2.5 and later;

- Native DEB distribution packages (**apt**):
  - **kernel** version 2.6.26 and later, **glibc** version 2.7 and later.

Dr.Web for Unix Internet gateways solution was tested to work on following distributions:

Linux distribution	Versions	
	32-bit	64-bit
ALT Linux	4.0 – 5.0 СПТ 6.0 (ru)	5.0 СПТ 6.0 (ru)
Arch Linux	–	all
ASPLinux	12.0 – 14.0	–
Debian	3.1 – 6.0	4.0 – 6.0
Fedora	–	14.0
Gentoo	all	
Mandriva Linux	higher than 2009, CS4	2010.x
Mandrake	10.x	10.x
openSUSE	10.3 – 11.0	10.3 – 11.0
PCLinux	2010	2010
RedHat Enterprise Linux (RHEL)	4.0 – 6.0	5.0 – 6.0
Suse Linux Enterprise Server	9.0 – 11.0	10.0 – 11.0
Ubuntu	7.04 – 11.04	7.04 – 11.04

Compatibility with MSVS OS

Dr.Web for Unix Internet gateways solution is compatible with following versions of **MSVS** OS:

- **MSVS** 3.0 80001-12 (rev. 0, 1, 2, 3);
- **MSVS** 3.0 80001-14 (rev. 0, 1, 2);
- **MSVS** 3.0 80001-08;

- **MSVS** 3.0 80001-16;
- **MSVS** 3.0 FSTEK.

Other **Linux** distributions that meet above requirements are also supported but were not tested. If you have any compatibility issues with your **Linux** distribution, please contact technical support at http://support.drweb.com/request/.

Package files location

Dr.Web for Unix Internet gateways solution is installed by default to `%bin_dir`, `%etc_dir` and `%var_dir` directories. OS-independent directory tree is created in these directories:

- `%bin_dir` – executable modules of **Dr.Web for Unix Internet gateways** and updating package **Dr.Web Updater** (perl script `update.pl`);
- `%bin_dir/lib/` – anti-virus engine as loadable library (`drweb32.dll`). In the same subdirectory various service libraries for packages of **Dr.Web for Unix Internet gateways** solution can reside;
- `%etc_dir/agent/` – additional configuration files for **Dr.Web Agent** module;
- `%etc_dir/monitor/` – additional configuration files for **Dr.Web Monitor** module;
- `%var_dir/bases/*.vdb` – databases of known viruses;
- `%etc_dir` – configuration files of **Dr.Web for Unix Internet gateways** solution: `drweb32.ini`, `agent.conf`, `monitor.conf`, `drweb-icapd.ini`, `drwebd.enable` and `drweb-monitor.enable` (three last-mentioned are for adjustment of daemons' operation*);
- `%bin_dir/lib/ru_scanner.dwl` – language file for **Dr.Web Scanner** package;
- `%bin_dir/web/` – a **Webmin** package with Web interface for **Dr.Web for Unix Internet gateways** (`drweb-icapd-`

web.wbm.gz);

- %bin_dir/doc/ — documentation. All documentation is presented in plain text files in English and Russian (KOI8-R and UTF-8 encodings) languages;
- %var_dir/infected/ – **Quarantine** directory to move infected or suspicious files to, if such reaction is specified in settings for **Dr.Web for Unix Internet gateways** software system components.

*) Placement of the enable files is depends from **Dr.Web for Unix Internet gateways** installation type:

- Installation from **universal package for UNIX systems**:

  Files will be placed to directory %etc_dir and will be named
  drweb-icapd.enable,
  drwebd.enable,
  drweb-monitor.enable.

- Installation from **native DEB packages**:

  Files will be placed to directory /etc/defaults and will be named
  drweb-icapd,
  drwebd,
  drweb-monitor.

- Installation from **native RPM packages**:

  Files will be placed to directory /etc/sysconfig and will be named
  drweb-icapd.enable,
  drwebd.enable,
  drweb-monitor.enable.

Configuration files

All **Dr.Web for Unix Internet gateways** settings are stored in configuration files which you can use to configure all software components. Configuration files are plain text files in the following format:

```
--- beginning of the file ---

[Section 1 name]
Parameter1 = value1, ..., valueK
...
ParameterM = value1, ..., valueK

[Section X name]
Parameter1 = value1, ..., valueK
...
ParameterY = value1, ..., valueK

--- end of the file ---
```

Configuration file content is satisfy to the next rules:

- Symbol ';' or '#' in line of configuration file mark a text in part of line from this symbol to end of line as comment. This text in line will be ignored by a **Dr.Web for Unix Internet gateways** modules while they will read configuration from a file.
- Contents of the file divide on a set of the named sections. Possible names of sections are rigidly determined and can't be changed. The name of section is set in square brackets.
- Each section of the file contain a group of the semantic parameters, which united on sense.
- In one line of file may be specified value (or values) only of one parameter.

- General format of parameter's value setting (spaces around '=' will be ignored):

```
<Parameter name> = <Value>
```

- Names of parameters are rigidly determined and can't be changed.
- Names of all sections, parameters, and values in file are case insensitive (only if value is not a directory or file name, because in UNIX systems they are case sensitive).
- Order of sections in file and order of parameters in sections are has no importance.
- Values of parameters in file may be enclosed in quotation marks (and must be enclosed in quotation marks if it contains white spaces).
- Some parameters can have more than one value. In this case values of parameter are separated by a comma or value of parameter is set several times in different lines of the configuration file. At transfer of values of parameter through a comma spaces between value and a comma (if they are present) are ignored. If the white spaces is a part of the value, all value is necessary for quoting.

Assignment possibility to parameter some values in this document is specified obviously. If for some parameter in this document or in comments in the configuration file obviously it is not specified that it can appropriate some values, the parameter may have only one value.

Example of setting of parameter with more than one value:

1) Comma-separated list of parameter's values:

```
Parameter = Value1, Value2,"Value 3"
```

2) Setting of parameter's values several times in different lines of the configuration file:

```
Parameter = Value2
Parameter = Value1
Parameter = "Value 3"
```

Please note, that order of values assignment to parameter has no importance.

If any parameter is commented out or not specified, it does not mean that this parameter has no value. In this case the default value will be used. Only few parameters are optional or do not have default values. All such cases will be described separately.

Notation of parameters description that is used in this Manual

Description of each parameter in this manual looks like as:

ParameterName = {Parameter type | Possible values}	Description of a parameter {Whether can have more than one value} {Special remarks} {Important remarks}
	Default value: **ParameterName** = {value | nothing}

Parameters in document are described in the order they are presented in the respective configuration file of **Dr.Web for Unix Internet gateways**.

In configuration files of **Dr.Web for Unix Internet gateways** are used followed parameter types:

- **numerical value** — parameter value can be zero or natural number.

- **time** — parameter value is time in selected units. Value is combine of integer (non-negative number of time units) and one symbol which is determine type of unit (s – seconds, m – minutes, h – hours, symbol is case insensitive). If symbol is not presented in the value, then type of time unit is seconds (by default).

  Examples: 30h, 15m, 6 (in last example – seconds).

- **size** — parameter value is size of memory block (on disk or in RAM) in selected units. Also combine non-negative integer number of units and one symbol which is determine type of unit (b – bytes, k – kilobytes, m – megabytes, g – gygabytes, symbol is case insensitive). If symbol is not presented in the value, then type of memory block unit is bytes (by default).

  Examples: 20b, 15k

- **permissons** — parameter value is three-digit integer which determine file access permissions in UNIX format:
  Each permission (digit) in these value is a combination (sum) of three base permissions:
  - Read permission (r) - 4;
  - Write permission (w) - 2;
  - Execute permission (x) - 1.

  First digit in value is determine permissions for file owner, second for owner's group, and third for all other users (not owners and not members of owner's group).

  Examples: 755, 644

- **logical** (**Yes/No**) — parameter value is string with logical value "Yes" or "No".

- **path to file/directory** — parameter value is string which determine path to a file or a directory in a file system. Note, that in UNIX systems files and directory names are case sensitive. If it is specified that the **mask** can be value of parameter, then you can to specify the file masks, which can contain the followed special symbols:
  - ? – replaces any one symbol in a name of the file (directory);

- `*` – replaces any (including empty) sequence of symbols in a name of the file (directory).

  Example: `"?.e*"` – the mask with which satisfy the files which name consists of only one any symbol, and extension of any length and begins with the symbol `'e'` (`x.exe`, `g.e`, `f.enable` and so on).

- **`action`** — parameter value is string with name of action (reaction of **Dr.Web for Unix Internet gateways**) which is must be applied to some object in dependence of results of its scanning. In some cases parameter can have more than one action (in this case parameter's type named **`actions list`**). In this case first action is mandatory and next actions are optional. Actions list can contain from 0 to 3 optional actions. Set of allowed actions can be different for different parameters (set of allowed actions is presented in Manual for each parameter). Common set of allowed actions see in chapter Allowed actions.

- **`address`** — parameter value is string with socket's address of some component of **Dr.Web for Unix Internet gateways** or of used external program (for IPC).
  Address always presented in a format `TYPE:ADDRESS`. Next `TYPE`s are allowed:

  - `inet` — this is a TCP socket, `ADDRESS` is specified in `PORT@HOST_NAME` format, where `HOST_NAME` can be either direct IP-address or host domain name.

    Example:

    ```
    Address = inet:3003@localhost
    ```

  - `local` — this is a local UNIX socket, `ADDRESS` in this case – path to a socket file.

    Example:

    ```
    Address = local:%var_dir/.daemon
    ```

  - `pid` — real address of a process must be read from a PID file of a process. This address type is allowed only in some cases, and in such a case this will be explicitly pointed out in parameter description.

- **`text value, string`** — parameter value is textual string (some text). Can be enclosed in quotation marks. If value contain white spaces, then it must be enclosed in quotation marks.
- **`log level`** — parameter value is string with name of verbosity level which is used for output messages in some log or **syslog** system service. List of allowed verbosity levels see in chapter Logging.
- **`possible values`** — parameter has the type which has not been described in the previous points of this list. In this case its allowed values are listed.

Behavior of modules in case of incorrect configuration files

- If any parameter is incorrect, respective module of **Dr.Web for Unix Internet gateways** would output error message to console (if module is running in foreground mode), log file and terminate.
- When any unknown parameter is found in configuration file, **Dr.Web for Unix Internet gateways** modules continue execution and output warning to the log file.

Some parameters can use regular expressions (for each parameter it is noted in its description) as values. Syntax of regular expressions of **Perl** is by default used. You can familiarize with bases of regular expressions, for example, in **Wikipedia** (article Regular expressions).

Logging

All **Dr.Web for Unix Internet gateways** components keep records about their operation in the logs. You can set a log mode for each component (output information into the file or to **syslog**).

You can also select a log verbosity level: for example, set high level of verbosity (the `Debug` option) or disable logging (the `Quiet` option). To set a verbosity level, use the **`LogLevel`** parameter. You can also specify additional parameters for certain modules to

configure their verbosity log level (for example, keeping records of IPC subsystem operation is modified by the IPCLevel parameter).

If the **LogLevel** configuration parameter is not available for a module, it is not allowed to adjust its log mode. In this case, the default log mode has a verbosity level similar to `Debug`.

Log verbosity levels

If allowed, you can set one of the following log verbosity levels for a **Dr.Web for Unix Internet gateways** component (the list is arranged in ascending order of detail):

- `Quiet` – Logging is disabled.
- `Error` – The component logs only fatal errors.
- `Alert` – The component logs errors and important warnings.
- `Warning` – The component logs errors and all warnings.
- `Info` – The component logs errors, warnings and information messages.
- `Notice` – This mode is similar to the `Info` mode, but the component also logs notifications.
- `Debug` – This mode is similar to the `Notice` mode, but the component also logs debug information.
- `Verbose` – The component logs all details on its activity (this mode is not recommended, because a large volume of logged data can considerably reduce performance of both the program and **syslog** service if it is enabled).

Each **Dr.Web for Unix Internet gateways** module can have different set of allowed log verbosity levels. For information on available verbosity levels, see description of the corresponding parameters.

Logging into syslog

If you select the mode of logging information into **syslog**, it is

necessary to specify a verbosity log level and a message source label. The label can be used by the **syslog** service for internal routing of messages to different logs. Routing rules are configured in the **syslog** daemon configuration file (usually, the path to the file is `/etc/syslogd.conf`).

To set a flag for syslog messages, specify the SyslogFacility parameter value in configuration files. You can specify one of the following parameter values:

- `Daemon` – a label of a resident system service (daemon) message;
- `Local0`, `...`, `Local7` – a label of a user application message (8 values are reserved `Local0` to `Local7`);
- `Kern` – a label of a system kernel message;
- `User` – a label of a user process message;
- `Mail` – a label of a mail system message.

Note that if information is logged into **syslog**, an additional parameter **`SyslogPriority`** can be specified in configuration files. The **`SyslogPriority`** parameter defines a verbosity level of logging into **syslog** and is modified by one of the values available for the **`LogLevel`** parameter. If you select the mode of logging into the file, the **`SyslogPriority`** parameter is ignored. Otherwise, information is logged into **syslog** with a less verbosity level.

Example:

Let us assume that logging of a module is defined by the following parameter values: **`LogLevel`** = `Debug`, **`SyslogPriority`** = `Error`. If mode of logging into **syslog** is selected, the log verbosity level is `Error` (that means only records about errors are to be logged and the `Debug` value is ignored).

Allowed actions

You can configure **Dr.Web for Unix Internet gateways** components to apply specified actions to objects that are detected to be malicious, suspicious or potentially dangerous.

You can use the following actions when configuring the settings:

- `Move` – move the file to the **Quarantine** folder;
- `Truncate` – truncate the file to a zero length;
- `Pass` – ignore the file;
- `Report` – only log information about the file;
- `Cure` – try to cure the infected object.

You can use the following actions when configuring **Dr.Web Scanner**:

- `Move` – move the file to the **Quarantine** folder;
- `Delete` – delete the infected file;
- `Rename` – rename the file;
- `Ignore` – ignore the file;
- `Report` – only log information about the file;
- `Cure` – try to cure the infected object.

Please note, that action names are case insensitive (for example, value `Report` is equal to `report`).

Installation and Deinstallation

Below you can find detailed description of **Dr.Web for Unix Internet gateways** solution installation and deinstallation procedures for UNIX systems. Administrator (`root`) privileges are necessary to perform all these operations.

You must carefully uninstall all packages of earlier product versions (delivered in rpm or deb formats) from any previous installations.

Dr.Web for Unix Internet gateways solution distribution package for UNIX systems is delivered in EPM format (script-based distribution package with installation and removal scripts and standard install/uninstall GUIs) designed to use with ESP Package Manager (EPM). Please note that all these scripts belong only to EPM-package itself, not to any of the components of **Dr.Web for Unix Internet gateways**.

Installation, deinstallation and upgrade procedures for **Dr.Web for Unix Internet gateways** solution can be carried out in the following ways:

- via install/uninstall GUIs;
- via install/uninstall console scripts.

During installation dependencies are supported, i.e. if for successful installation of any component some other components must be previously installed (e.g., `drweb-daemon` package requires **`drweb-common`** and **`drweb-bases`** packages to be previously installed), then they will be installed automatically.

If you install **Dr.Web for Unix Internet gateways** solution to the computer, where some other **Dr.Web** products have been previously installed from EPM-packages, then at every attempt to remove some modules via uninstall GUI you will be prompted to remove absolutely all **Dr.Web** modules, including those from other products.

Please, pay special attention to the actions you perform and selections you make during deinstallation to avoid accidental removal of some useful components.

Installation from Distribution Package for UNIX systems

Dr.Web for Unix Internet gateways solution is distributed as a self-extracting package `drweb-internet-gateways_[version number]~[OS name].run`.

The following components are included into this distribution:

- `drweb-common`: contains main configuration file `drweb32.ini`, libraries, documentation and directory structure. During installation of this component `drweb` user and `drweb` group will be created;
- `drweb-bases`: contains Anti-virus search Engine (**Dr.Web Engine**) and virus databases. It requires `drweb-common` package to be previously installed;
- `drweb-libs`: contains common libraries for all the components of the software solution;
- `drweb-epm6.0.2-libs`: contains libraries for graphical installer and uninstaller. It requires `drweb-libs` package to be previously installed;
- `drweb-epm6.0.2-uninst`: contains files of graphical uninstaller. It requires `drweb-libs` package to be previously installed;
- `drweb-boost147`: containes common libraries for **Dr.Web Agent** and **Dr.Web Monitor**. It requires `drweb-libs` package to be previously installed;
- `drweb-updater`: contains update utility **Dr.Web Updater** for **Dr.Web Engine** and virus databases. It requires `drweb-common` and `drweb-libs` packages to be previously installed;

- `drweb-agent`: contains **Dr.Web Agent** executable files and its documentation. It requires `drweb-common` and `drweb-boost147` packages to be previously installed;
- `drweb-agent-es`: contains files required to run **Dr.Web Agent** in central protection mode. It requires `drweb-agent`, `drweb-updater` and `drweb-scanner` packages to be previously installed;
- `drweb-daemon`: contains **Dr.Web Daemon** executable files and its documentation. It requires `drweb-bases` and `drweb-libs` packages to be previously installed;
- `drweb-scanner`: contains **Dr.Web Scanner** executable files and its documentation. It requires `drweb-bases` and `drweb-libs` packages to be previously installed;
- `drweb-monitor`: contains **Dr.Web Monitor** executable files and its documentation. It requires `drweb-agent`, `drweb-common` and `drweb-boost147` packages to be previously installed;
- `drweb-icapd`: contains **Dr.Web ICAPD** executable files and its documentation. It requires `drweb-common`, `drweb-icapd-dws` and `drweb-libs` packages to be previously installed;
- `drweb-icapd-dws`: contains content-specific black and white lists of Internet resources. It requires `drweb-common` package to be previously installed;
- `drweb-icapd-web`: contains Web interface of **Dr.Web for Unix Internet gateways**;
- `drweb-internet-gateways-doc`: contains documentation for **Dr.Web for Unix Internet gateways**.

In distributions for 64-bit systems an additional package with libraries is included: `drweb-libs64` - containing libraries for 64-bit components.

To install all the components of **Dr.Web for Unix Internet gateways** solution automatically you may use either console (CLI) or the default file manager of your GUI-based shell. In the first case allow the execution of the corresponding self-extracting package with the following command:

```
# chmod +x drweb-internet-gateways_
[version number]~[OS name].run
```

and then run it:

```
# ./drweb-internet-gateways_[version number]~
[OS name].run
```

As a result, `drweb-internet-gateways_[version number]~[OS name]` directory will be created, and install GUI will be initialized. If startup has been performed without root privileges, install GUI will try to gain appropriate privileges by itself.

If install GUI fails to start, then interactive console installer will be initialized.

If you want only to extract the content of the package without starting install GUI, use `--noexec` command line parameter:

```
# ./drweb-internet-gateways_[version number]~
[OS name].run --noexec
```

After you extract the content, you may initialize install GUI and continue setup with the following command:

```
# drweb-internet-gateways_[version number]~
[OS name]/install.sh
```

To initialize console installer use the following command:

```
# drweb-internet-gateways_[version number]~
[OS name]/setup.sh
```

During the installation the following processes take place:

- Original configuration files are recorded to the `%etc_dir/software/conf/` directory with the following names: `[configuration_file_name].N`.
- Operational copies of configuration files are placed to the

corresponding directories of the installing software.

- Other files are installed. If in the corresponding directory file with the same name already exists (e.g. after inaccurate removal of previous versions of the packages), it will be overwritten with the new file, and its copy will be saved as `[file_name].O`. If some `[file_name].O` file already exists in this directory, it will be replaced with the new file of the same name.
- If you select a **Run interactive postinstall script** check-box in the corresponding window of the graphical installer, then after installation of the components the post-install script will be initialized for basic adjustment of **Dr.Web for Unix Internet gateways**.

Using GUI Installer

To install with GUI

1. Execute the following command:

```
# drweb-internet-gateways_[version number]~
[OS name]/install.sh
```

The setup program launches. On any step, click **Back** or **Next** to navigate, or click **Cancel** to abort installation.

On the Welcome screen, click **Next**.

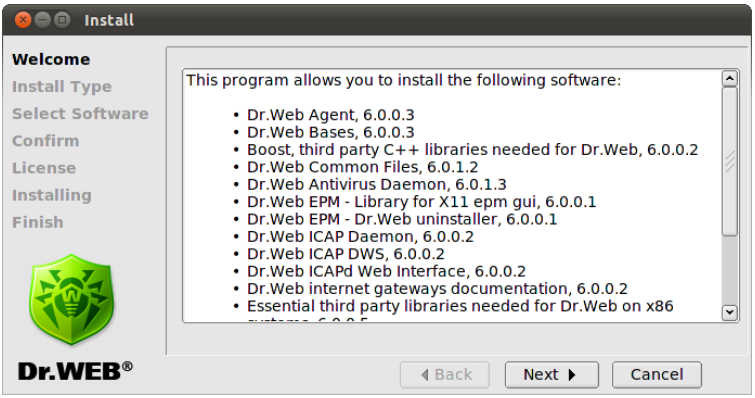


Figure 2. Welcome window

2. On the **Install Type** screen, select installation type: typical configuration of **Dr.Web for Unix Internet gateways** with all the components selected by default, or custom configuration.

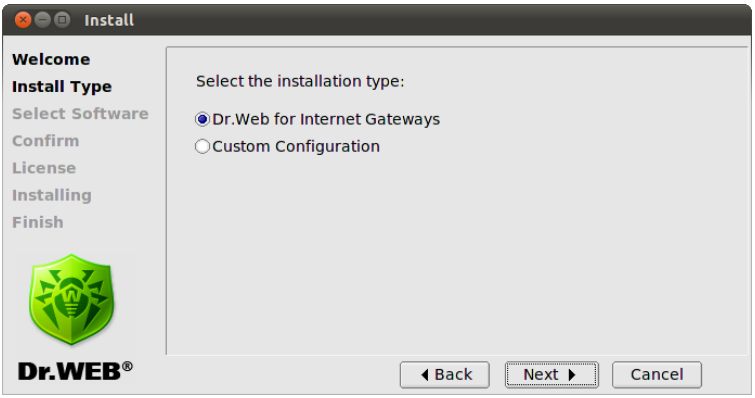


Figure 3. Install type window

If you selected **Custom Configuration**, then select necessary components on the **Select Software** screen:

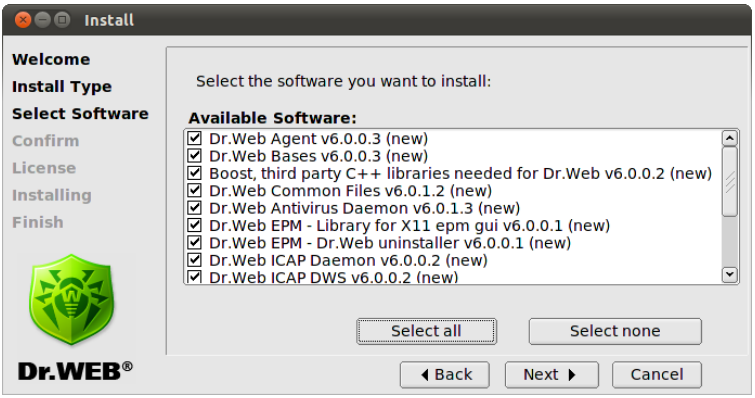


Figure 4. Select Software screen

If installation of a component requires some other components to be previously installed, all corresponding dependencies are selected for installation automatically. For example, if you select to install **Dr.Web Antivirus Daemon**, then **Dr.Web Bases** and **Dr.Web Common Files** are selected and installed automatically.

Click **Install None** to clear selection.

When you complete selection, click **Next**.

3. On the **Confirm** screen, review and confirm the list of components to install:

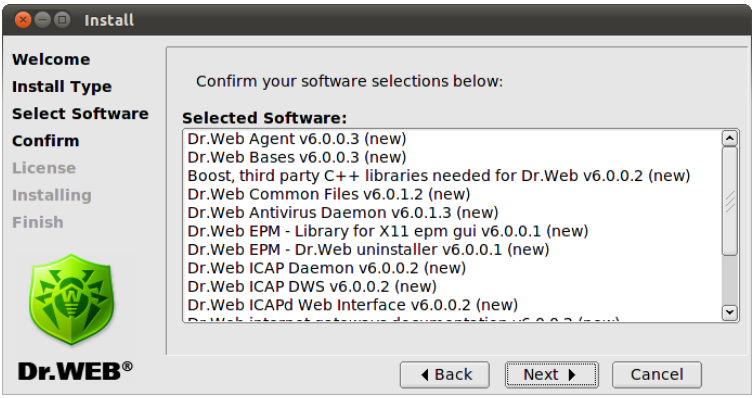


Figure 5. Confirm screen

Click **Next** to confirm selection, or click **Back** to make changes.

4. Review the **License Agreement**. To proceed, you need to accept it. If necessary, use the **Language** list to select preferred language:

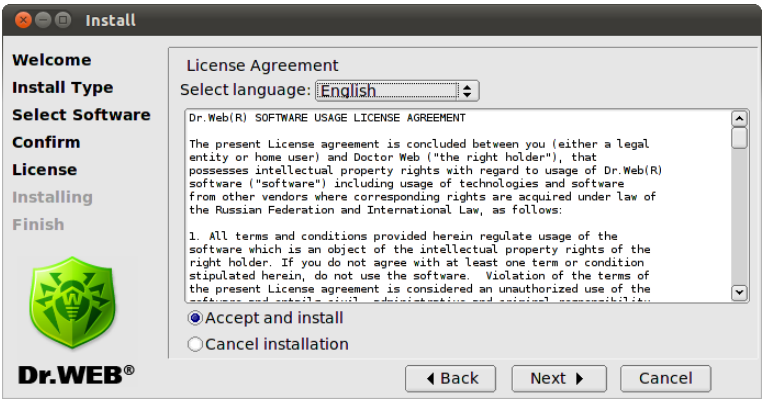


Figure 6. License Agreement screen

5. If you accepted the **License Agreement**, installation start. On the **Installing** screen, you can review the installation process in real-time:

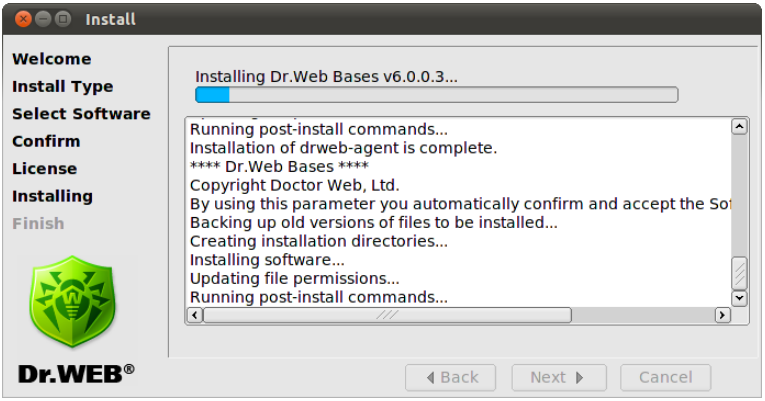


Figure 7. Installing screen

This report is logged at the same time in the `install.log` log file located at the `drweb-internet-gateways_[version number]~[OS name]` directory. If you selected to **Run interactive postinstall script**, then after installation of the components is completed, the post-install script is initialized for basic configuration of **Dr.Web for Unix Internet gateways**.

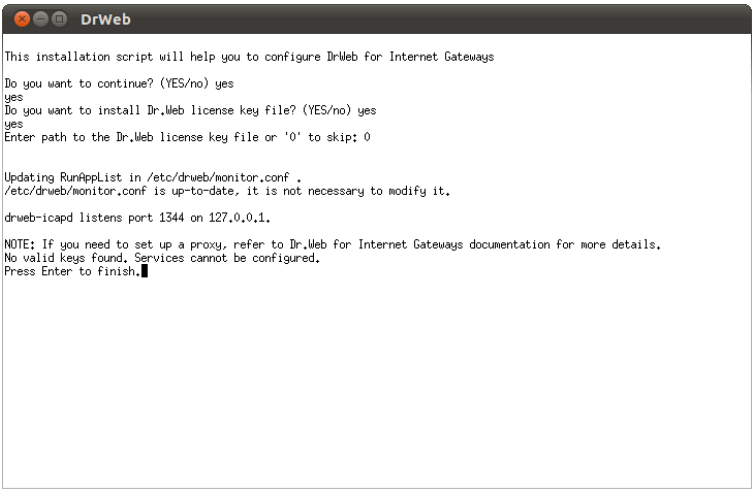


Figure. 8. Interactive post-install script

This script offers you to specify a path to the key file and to enable automatically the services necessary for proper operation of **Dr.Web for Unix Internet gateways** (i.e., **Dr.Web Daemon**, **Dr.Web Agent**, **Dr.Web Monitor**).

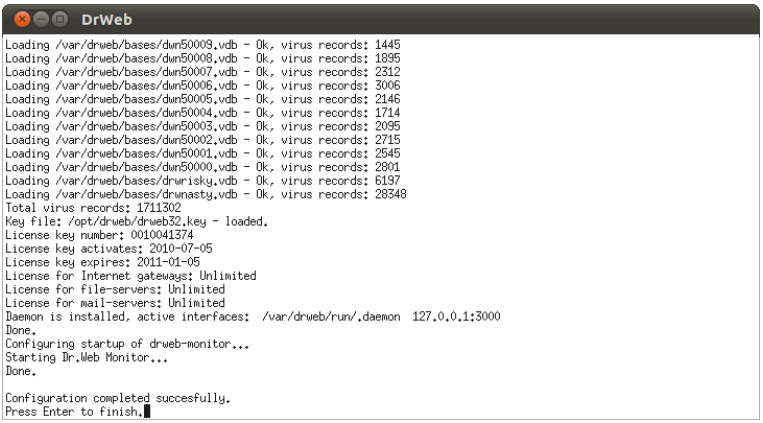


Figure 9. Starting services

On the **Finish** screen, review notifications further setup requirements that may be needed to provide proper operation of **Dr.Web for Unix Internet gateways**, click **Close** to exit setup:

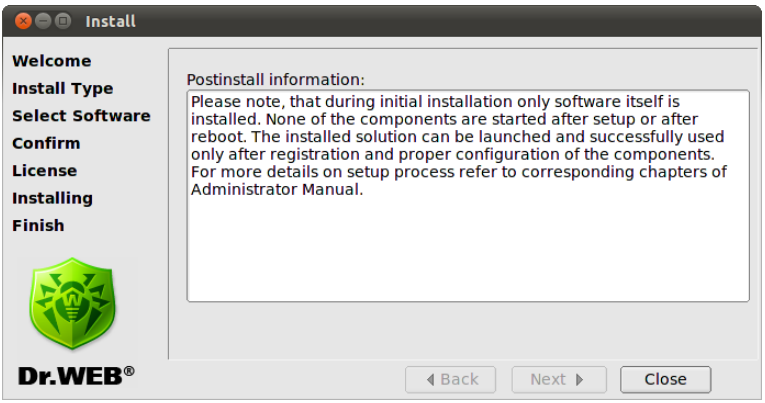


Figure 10. Finishing screen

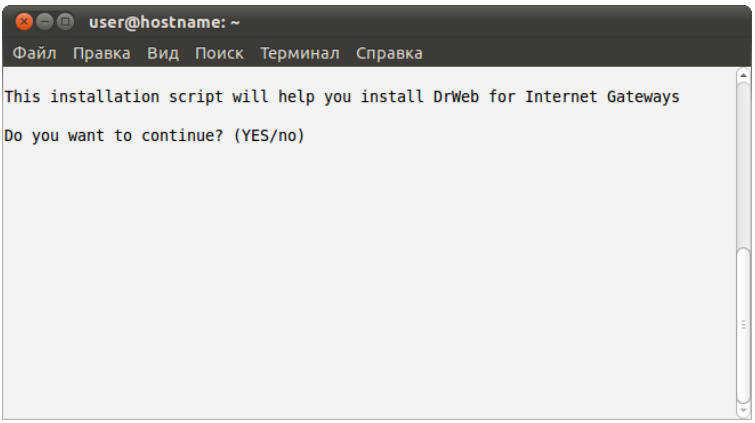
Using Console Installer

Console installer starts automatically is graphical installer fails to start. If console installer also fails to initialize (e.g., when it is impossible to gain necessary privileges), then you can try to run the following command with `root` privileges:

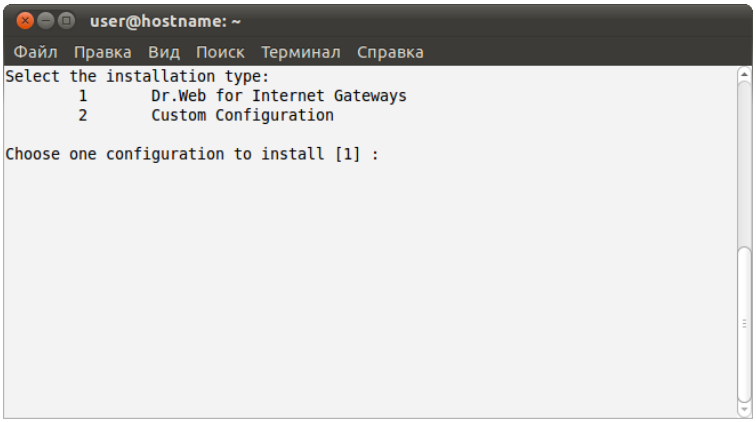
```
# drweb-internet-gateways_[version number]~
[OS name]/setup.sh
```

To install from console

1. Once the console installer start, a conversation window opens:

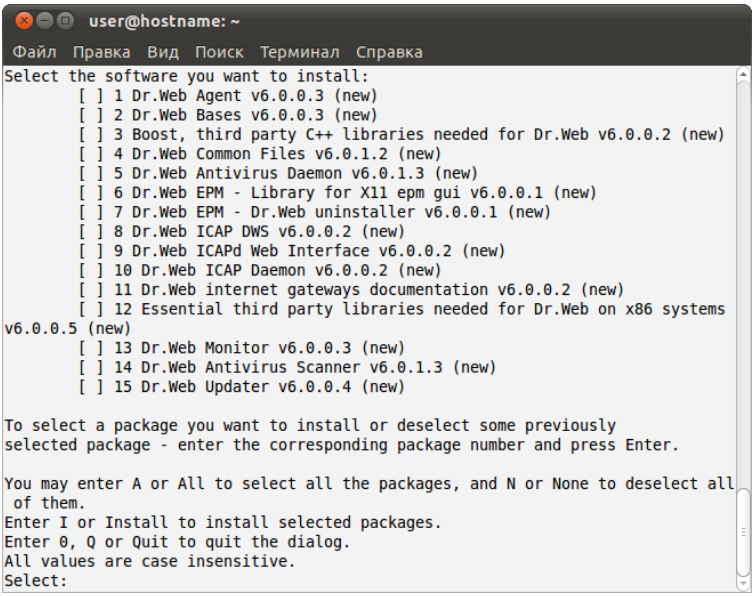


2. If you want to install **Dr.Web for Unix Internet gateways,** type **Y** or **Yes** (values are case insensitive), otherwise type **N** or **No**. Press ENTER.
3. If you selected to install **Dr.Web for Unix Internet gateways,** installer suggests you to select the type of installation:



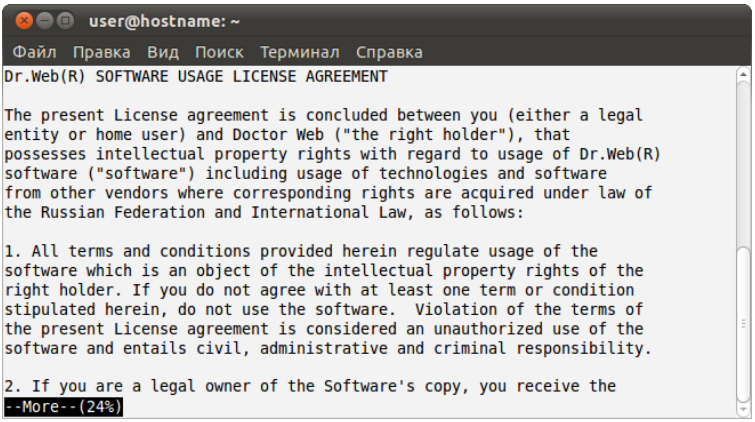
Type the number of corresponding mode and press ENTER.

4. If you selected **Custom Configuration**, specify components to install:



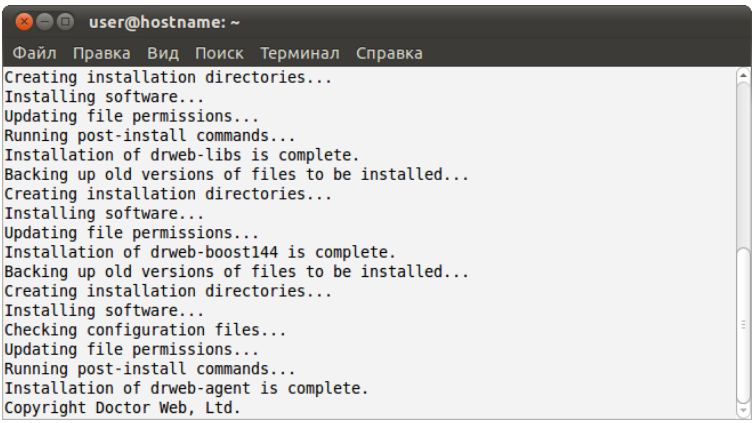
Type the number of a component from the list and press ENTER.

5. Review the **License Agreement**. To scroll the text, press SPACEBAR:



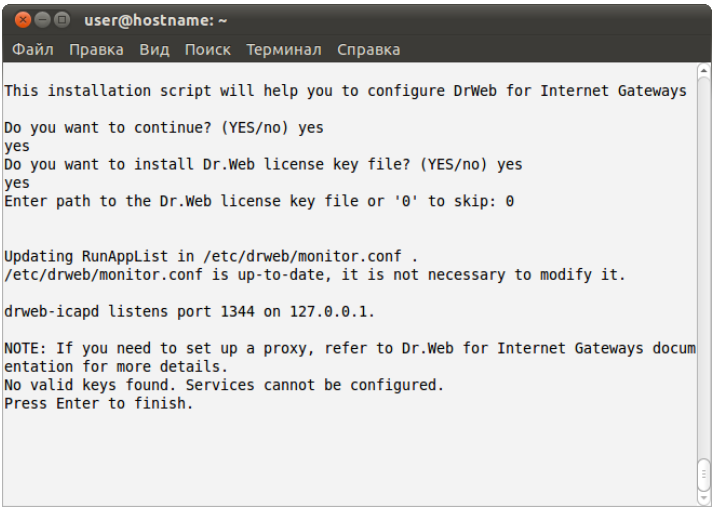
To continue the installation, you need to accept the **License Agreement**. If you agree to the terms, type **Y** or **Yes**.

6. The installation process starts immediately. You can review the installation process in console in real-time:



7. After installation of the components, the post-install script runs automatically to set up basic configuration of **Dr.Web for Unix Internet gateways**. This script offers you to specify path to the license key file and enable automatically all the services necessary for proper operation of **Dr.Web for Unix Internet**

gateways (i.e., **Dr.Web Daemon**, **Dr.Web Agent**, **Dr.Web Monitor**). In additional script offers to you .



Removal of Distribution Package for UNIX Systems

To remove all the components of **Dr.Web for Unix Internet gateways** solution via uninstall GUI, initialize it with the following command:

```
# %bin_dir/remove.sh
```

If startup has been performed without root privileges, uninstall GUI will try to gain appropriate privileges by itself.

If uninstall GUI fail to start, then interactive console uninstaller will be initialized.

After deinstallation you can also remove `drweb` user and `drweb` group from your system.

During the deinstallation the following actions are performed:

- Original configuration files are removed from the `%etc_dir/software/conf/` directory.
- If operational copies of configuration files were not modified by the user, they are also removed. If the user has made any changes to them, they are preserved.
- Other **Dr.Web** files are removed. If a copy of some old file has been created at installation, this file will be restored under the name it had before the installation. Usually, such copies are named `[file_name].O`.
- License key files and log files are preserved in corresponding directories.

Using GUI Uninstaller

To uninstall with GUI

1. Execute the following command:

   ```
   # %bin_dir/remove.sh
   ```

   The setup program launches. On any step, click **Back** or **Next** to navigate, or click **Cancel** to abort installation.

   On the Welcome screen, click **Next**:

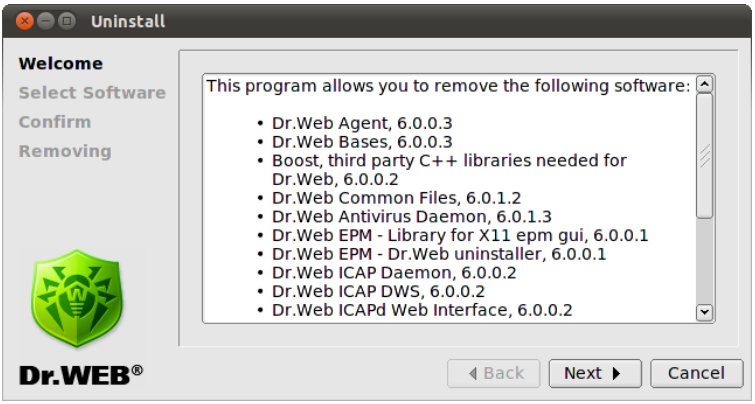


Figure 11. Welcome screen

2. On the **Select Software** screen, select components to remove:

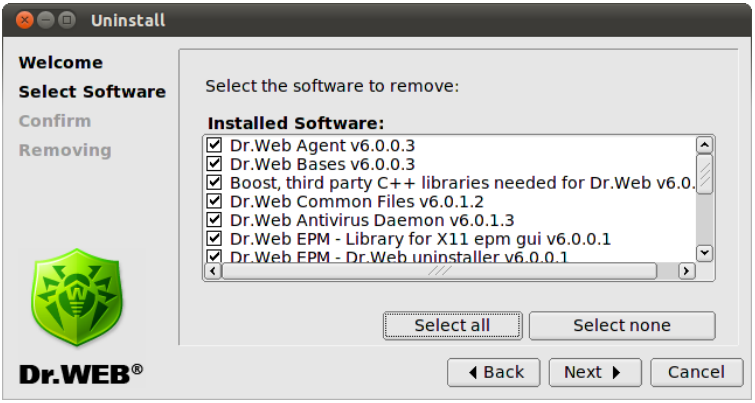


Figure 12. Select Software screen

All corresponding dependencies will be selected for de-installation automatically.

If you installed **Dr.Web for Unix Internet gateways** solution on a computer with another **Dr.Web** product installed from EPM-packages, then setup lists all **Dr.Web**

modules for both **Dr.Web for Unix Internet gateways** and the old product. Please, pay attention to the actions you perform and selections you make during de-installation to avoid accidental removal of useful components.

Click **Remove All** to select all components, or click **Remove None** to clear selection.

When you complete selection, click **Next**.

3. On the **Confirm** screen, review and confirm the list of components to remove:

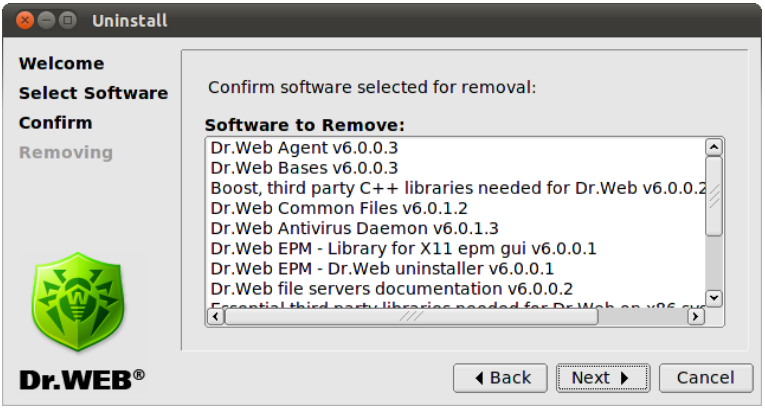


Figure 13. Confirm screen

Click **Next** to confirm selection, or click **Back** to make changes.

4. On the **Removal** screen, you can review removal process in real-time:

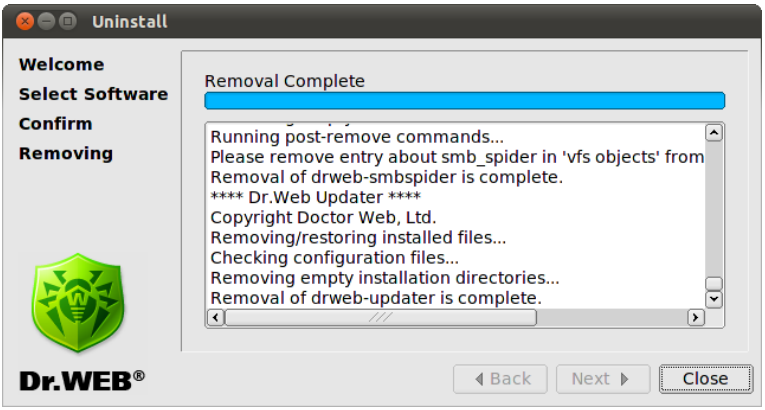


Figure 14. Removal screen

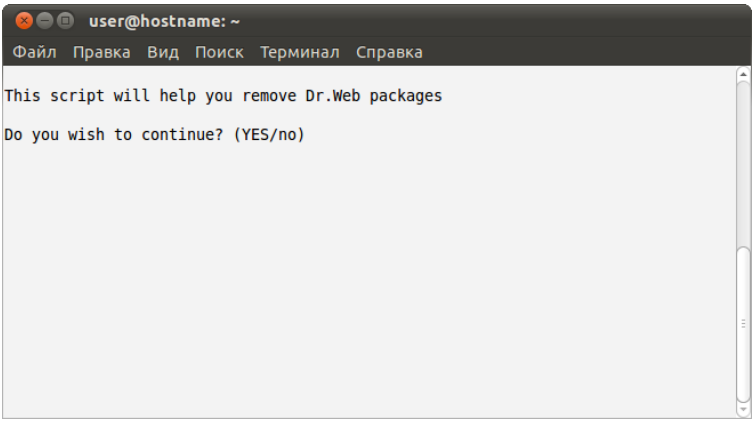
5. Click **Close** to exit setup.

Using Console Uninstaller

Console uninstaller starts automatically when graphical uninstaller fails to start.

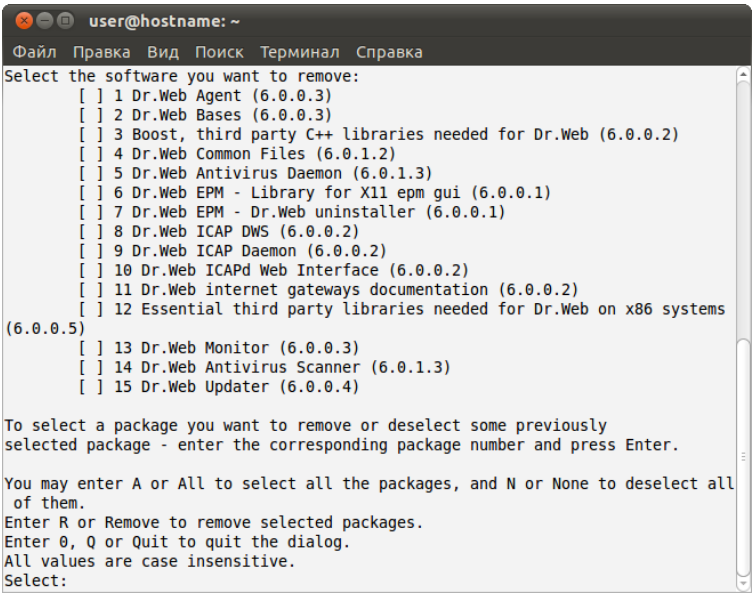
To uninstall from console

1. Once the console uninstaller start, a conversation window opens:

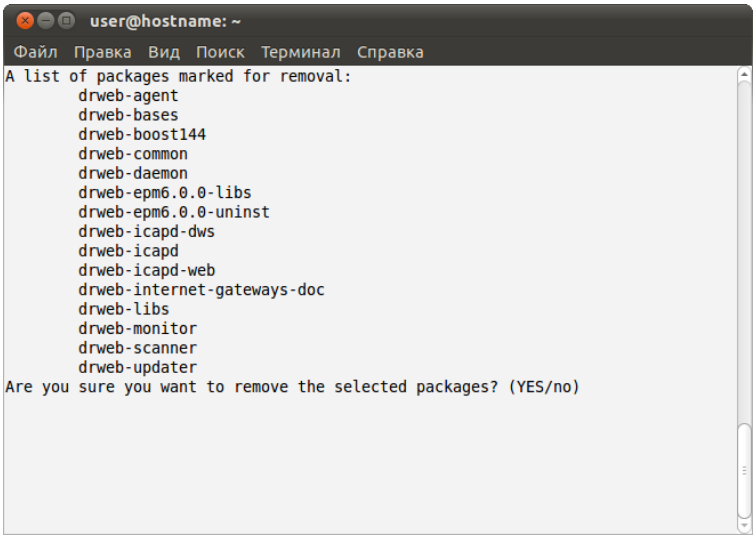


If you want to uinstall **Dr.Web for Unix Internet gateways**, type **yes**, otherwise type **no**. Press ENTER.

2. Review the list of components available for removal:



3. Follow the prompts to select components to remove.
4. To start uninstall, confirm you selection by typing **Y** or **Yes** and pressing ENTER (values are case insensitive):



5. You can review removal process in console in real-time.
6. Once the process completes, exit setup.

Upgrade of Distribution Package for UNIX Systems

Upgrade process combines install and uninstall procedures. If you want to upgrade **Dr.Web for Unix Internet gateways** solution, you must download the latest version of corresponding software, remove the previous version and install the new one.

After you upgrade **Dr.Web for Unix Internet gateways** solution, license key files, log files and configuration files, modified by the user, are preserved in corresponding directories.

Installation from Native Packages

You can install **Dr.Web for Unix Internet gateways** from native packages for common **Linux** distributions or **Solaris** and **FreeBSD** operating systems.

All packages are located in the **Dr.Web** official repository http://officeshield.drweb.com/drweb/. Once you have added the repository to the package manager of your system, you can install, update or remove necessary packages like any other program from repository. All dependencies will be resolved automatically.

After installing from repository, automatic post-install script for installing license key file will not be initiated. Licence key file must be manually copied to `%bin_dir`.

You need to restart all **Dr.Web** services after updating from repository for the updates to take effect.

Below you will find detailed instruction on how to add **Dr.Web** repository to supported package managers and install **Dr.Web for Unix Internet gateways** using console.

All commands below for adding repositories, importing keys, installing and removing packages must be ran with administrator privileges (`root`).

If it is necessary, use commands **`sudo`** or **`su`**.

Debian, Ubuntu (apt)

1. Installation:

Debian repository is signed by the digital key. For correct operation you need to import the key with command

```
wget -O - http://officeshield.drweb.com/drweb/drweb.key | apt-key add -
```

or

```
curl http://officeshield.drweb.com/drweb/drweb.key
| apt-key add -
```

To add the repository to you system, add the following line to `/etc/apt/sources.list` file:

```
deb http://officeshield.drweb.com/drweb/debian
stable non-free
```

To install **Dr.Web for Unix Internet gateways** issue commands:

```
apt-get update
apt-get install drweb-internet-gateways
```

2. Deinstallation:

To remove **Dr.Web for Unix Internet gateways** issue command:

```
apt-get remove drweb-internet-gateways
```

To remove all installed packages from **Dr.Web**, issue command (may be before '*' you'll need to use backslash: '*'):

```
apt-get remove drweb*
```

To automatic removing from a system not used packages you can issue command:

```
apt-get autoremove
```

Pay attention to the following features of removal with **apt-get** use:

1. The first use case of the command will remove only package `drweb-internet-gateways`, but other packages (which could be automatically established at installation of this package, for resolving its dependences) will be remained in the system.
2. The second use case of the command will remove from the system all packages, names of which are beginning from string '`drweb`' (this is standard rule of **Dr.Web** packages naming). Please, note that this command will remove from the system all packages with these names, not only packages of product **Dr.Web for Unix Internet gateways**.
3. The third use case of the command will remove from the system all unused packages, which were automatically installed for resolving dependences of some removed packages. Please, note that this command will remove from the system all unused packages, not only unused packages of product **Dr.Web for Unix Internet gateways**.

Also you can use graphical manager (e.g. **Synaptic**, **aptitude**) to install or remove the packages.

ALT Linux, PCLinuxOS (apt-rpm)

1. Installation:

To add the repository to you system, add the following line to `/etc/apt/sources.list` file:

32-bit version:

```
rpm http://officeshield.drweb.com/drweb/altlinux stable/i386 drweb
```

64-bit version:

```
rpm http://officeshield.drweb.com/drweb/altlinux stable/x86_64 drweb
```

To install **Dr.Web for Unix Internet gateways** issue commands:

```
apt-get update
apt-get install drweb-internet-gateways
```

2. Deinstallation:

In this case deinstallation process is same as for **Debian** and **Ubuntu** (see above).

Also you can use graphical manager (e.g. **Synaptic**, **aptitude**) to install or remove the packages.

Mandriva (urpmi)

1. Installation:

Download repository key from http://officeshield.drweb.com/drweb/drweb.key and save it on disk. Then, import the key with command

```
rpm --import <path to repository key>
```

Open the following file:

http://officeshield.drweb.com/drweb/drweb-i386.urpmi-media

or

http://officeshield.drweb.com/drweb/drweb-x86_64.urpmi-media

and you will be offered to add repository to the system.

Alternatively, you can add the repository using console with command

```
urpmi.addmedia drweb http://officeshield.drweb.com/drweb/mandriva/stable/i386/
```

or

```
urpmi.addmedia drweb http://officeshield.drweb.com/
drweb/mandriva/stable/x86_64/
```

To install **Dr.Web for Unix Internet gateways** issue commands:

```
urpmi.update drweb
urpmi drweb-internet-gateways
```

2. Deinstallation:

To remove **Dr.Web for Unix Internet gateways** issue command:

```
urpme drweb-internet-gateways
```

To automatic removing from a system not used packages you can issue command:

```
urpme --auto-orphans drweb-internet-gateways
```

Pay attention to the following features of removal with **urpme** use:

1. The first use case of the command will remove only package `drweb-internet-gateways`, but other packages (which could be automatically established at installation of this package, for resolving its dependences) will be remained in the system.
2. The second use case of the command will remove package `drweb-internet-gateways`, and all unused packages, which were automatically installed for resolving dependences of some removed packages. Please, note that this command will remove from the system all unused packages, not only unused packages of product **Dr.Web for Unix Internet gateways**.

Also you can use graphical manager (e.g. **rpmdrake**) to install or remove the packages.

Red Hat Enterprise Linux, Fedora, CentOS (yum)

1. Installation:

Add the file with following content to `/etc/yum.repos.d` directory

32-bit version:

```
[drweb]
name=DrWeb - stable
baseurl=http://officeshield.drweb.com/drweb/el5/
stable/i386/
gpgcheck=1
enabled=1
gpgkey=http://officeshield.drweb.com/drweb/drweb.key
```

64-bit version:

```
[drweb]
name=DrWeb - stable
baseurl=http://officeshield.drweb.com/drweb/el5/
stable/x86_64/
gpgcheck=1
enabled=1
gpgkey=http://officeshield.drweb.com/drweb/drweb.key
```

To install **Dr.Web for Unix Internet gateways** issue command:

```
yum install drweb-internet-gateways
```

2. Deinstallation:

To remove **Dr.Web for Unix Internet gateways** issue command:

```
yum remove drweb-internet-gateways
```

To remove all installed packages from **Dr.Web**, issue command (may be before '*' you'll need to use backslash: '*'):

```
yum remove drweb*
```

Pay attention to the following features of removal with **yum** use:

1. The first use case of the command will remove only package `drweb-internet-gateways`, but other packages (which could be automatically established at installation of this package, for resolving its dependences) will be remained in the system.
2. The second use case of the command will remove from the system all packages, names of which are beginning from string '`drweb`' (this is standard rule of **Dr.Web** packages naming). Please, note that this command will remove from the system all packages with these names, not only packages of product **Dr.Web for Unix Internet gateways**.

Also you can use graphical manager (e.g. **PackageKit**, **Yumex**) to install or remove the packages.

Zypper package manager (SUSE Linux)

1. Installation:

To add the repository, run the following command:

```
zypper ar -t YUM http://officeshield.drweb.com/
drweb/el5/stable/i386/ drweb
```

or

```
zypper ar -t YUM http://officeshield.drweb.com/
drweb/el5/stable/x86_64/ drweb
```

To install **Dr.Web for Unix Internet gateways** issue commands:

```
zypper refresh
zypper install drweb-internet-gateways
```

2. Deinstallation:

To remove **Dr.Web for Unix Internet gateways** issue command:

```
zypper remove drweb-internet-gateways
```

To remove all installed packages from **Dr.Web**, issue command (may be before '*' you'll need to use backslash: '*'):

```
zypper remove drweb*
```

Pay attention to the following features of removal with **zypper** use:

1. The first use case of the command will remove only package `drweb-internet-gateways`, but other packages (which could be automatically established at installation of this package, for resolving its dependences) will be remained in the system.
2. The second use case of the command will remove from the system all packages, names of which are beginning from string '`drweb`' (this is standard rule of **Dr.Web** packages naming). Please, note that this command will remove from the system all packages with these names, not only packages of product **Dr.Web for Unix Internet gateways**.

Also you can use graphical manager (e.g. **YaST**) to install or remove the packages.

FreeBSD operating system

Installation:

You can install **Dr.Web** products from meta-ports for **FreeBSD**. Download archive `drweb-internet-gateways-meta_current-current~freebsd_all.tar.gz` from http://officeshield.drweb.com/drweb/freebsd/ports/. Then, unpack the archive and run `make install` to compile and install **Dr.Web for Unix Internet gateways**. If you install **Dr.Web for Unix Internet gateways** in **FreeBSD** 6.1, use `-I` command line parameter to define path to `/usr/ports/Mk/` directory that contains port tree files.

Example:

```
tar -xzvf drweb-internet-gateways-
meta_current-current~freebsd_all.tar.gz
make install -I /usr/ports/Mk/
```

Solaris

Installation:

Native packages for **Solaris** can be downloaded from the public FTP-server:

ftp://ftp.drweb.com/pub/drweb/unix/release/Solaris/packages

and installed using **pkgadd** utility.

Startup of Dr.Web for Unix Internet gateways

This section describes startup of **Dr.Web for Unix Internet gateways** in **Linux**, **Solaris** or **FreeBSD** operating systems.

For Linux and Solaris

To run the **Dr.Web for Unix Internet gateways** solution, do the following:

1. Register the software.
2. Place the key file to the directory for **Dr.Web for Unix Internet gateways** executable files (default directory for UNIX systems is `%bin_dir`). Key file name may vary depending on the distribution kit (for the detailed information, see Software Registration chapter):
   - If **Dr.Web for Unix Internet gateways** was purchased as a standalone product License key file is called `drweb32.key`. In this case, you should just copy file to `%bin_dir` directory without changing its name.
   - If **Dr.Web for Unix Internet gateways** was purchased as a part of **Dr.Web Enterprise Security Suite** set, archive received during registration contains a key file for the **Enterprise Server** (`enterprise.key`) and a key file for workstations (`agent.key`). Rename `agent.key` as `drweb32.key` and copy it to the `%bin_dir` folder.

   If you want to use key file with a different location or name (for example, `agent.key`), you must specify its full path as a `Key` parameter value of configuration file `drweb32.ini`. While working in `Standalone` mode, this alternative path to the key file must be also specified in the value of **`LicenseFile`** parameter of the `agent.conf` configuration file of the **Dr.Web Agent** component.

3. Configure the software by making necessary changes to configuration files. Refer to the corresponding chapters of this Manual for the detailed information on configuration.
4. In `drwebd.enable` file set `1` as a value of `ENABLE` variable to enable startup of **Dr.Web Daemon**. If it is not required to run **Dr.Web Daemon** (properly configured and working **Daemon** on some other computer in the network is used), `ENABLE` value must be set to `0` (it is also used as a default value).
5. In `drweb-monitor.enable` file set `1` as a value of `ENABLE` variable to enable startup of **Dr.Web Monitor**.

Placement of the `enable` files is depends from **Dr.Web for Unix Internet gateways** installation type:

- Installation from **universal package for UNIX systems**:

  Files will be placed to directory `%etc_dir` and will be named
  `drweb-icapd.enable`,
  `drwebd.enable`,
  `drweb-monitor.enable`.

- Installation from **native DEB packages**:

  Files will be placed to directory `/etc/defaults` and will be named
  `drweb-icapd`,
  `drwebd`,
  `drweb-monitor`.

- Installation from **native RPM packages**:

  Files will be placed to directory `/etc/sysconfig` and will be named
  `drweb-icapd.enable`,
  `drwebd.enable`,
  `drweb-monitor.enable`.

---

6. Start initializing scripts for **Dr.Web Daemon** and **Dr.Web**

Monitor either from console or from any file manager of your operation system. After startup **Dr.Web Monitor** will initialize all other components of the **Dr.Web for Unix Internet gateways** solution. Also each component can be started independently, but **Dr.Web Agent** module must be started first, because all other components will receive their configuration through the **Agent**.

In case of installation from native packages in Solaris:

Through **Dr.Web for Unix Internet gateways** installing, service management system SMF attempts to launch **Dr.Web Monitor** component. If **Monitor** can't find licence key file (for example in case of first **Dr.Web for Unix Internet gateways** installing), it stops it's work and changes SMF to maintenance state.

To launch **Monitor**, maintenance state should be reseted:

- Enter the command

  ```
  # svcs -p <FMRI>
  ```

  where FMRI - unique identifier of controlled resource, in this case - **Dr.Web Monitor** component.
- Forcibly cancel processes from `svcs -p` output list.

  ```
  # pkill -9 <PID>
  ```

  where PID — number of process, that listed above.
- Restart **Dr.Web Monitor** with command

  ```
  # svcadm clear <FMRI>
  ```

While installing **Dr.Web for Unix Internet gateways** from native packages in Solaris, complex launches with service management system SMF:

```
# svcadm enable <drweb-monitor>
# svcadm enable <drweb-daemon>
# svcadm enable <drweb-icapd>
```

To stop service enter:

```
# svcadm disable <service_name>
```

7. Start up proxy-server.

Modules `drwebd` and `drweb-icapd` can be launched in two modes:

1. Standard run through the `init` script
2. Using **Dr.Web Monitor**

While working in second mode, you need to set `ENABLE` parameter to 0 in `enable` file.

Each of the components can be started manually as well, but note, that **Dr.Web Agent** component must be initialized beforehand in order to provide configuration information to all the other components.

For FreeBSD

To run the **Dr.Web for Unix Internet gateways** solution, do the following:

1. Register the software.
2. Place the key file to the directory for **Dr.Web for Unix Internet gateways** executable files (default directory for UNIX systems is `%bin_dir`). Key file name may vary depending on the distribution kit (for the detailed information, see Software Registration chapter):
   - If **Dr.Web for Unix Internet gateways** was purchased as a standalone product License key file is called `drweb32.key`. In this case, you should just copy file to `%bin_dir` folder without changing its name.

- If **Dr.Web for Unix Internet gateways** was purchased as a part of Dr.Web Enterprise Security Suite set, archive received during registration contains a key file for the **Enterprise Server** (`enterprise.key`) and a key file for workstations (`agent.key`). Rename `agent.key` as `drweb32.key` and copy it to the `%bin_dir` directory.

If you want to use key file with a different location or name (for example, `agent.key`), you must specify its full path as a `Key` parameter value of configuration file `drweb32.ini`. While working in `Standalone` mode, this alternative path to the key file must be also specified in the value of **`LicenseFile`** parameter of the `agent.conf` configuration file of the **Dr.Web Agent** component.

3. Configure the software by making necessary changes to configuration files. Refer to the corresponding chapters of this Manual for the detailed information on configuration.
4. Add the following lines to the `/etc/rc.conf` file:
   - `drwebd_enable="YES"` – to enable startup of **Dr.Web Daemon**. If it is not required to run **Dr.Web Daemon** (properly configured and working **Daemon** on some other computer in the network is used), then you can just not include the specified line in the `rc.conf` file;
   - `drweb_monitor_enable="YES"` – to enable startup of **Dr.Web Monitor.**
5. Start initializing scripts for **Dr.Web Daemon** and **Dr.Web Monitor** either from console or from any file manager of your operation system. After startup **Dr.Web Monitor** will initialize all other components of the **Dr.Web for Unix Internet gateways** solution. Also each component can be started independently, but **Dr.Web Agent** module must be started first, because all other components will receive their configuration through the **Agent**.
6. Start up proxy-server.

Each of the components can be started manually as well, but note, that **Dr.Web Agent** component must be initialized beforehand in order to provide configuration information to all the other components

OS with SELinux

To set up successful operation of **Dr.Web Scanner** and **Dr.Web Daemon** components in OS protected by **SELinux**, you must compile politics for operation with corresponding modules **drweb-scanner** and **drweb-daemon** or set 1 as a value of allow_execheap variable.

Templates used in compilation of modules for politics may vary widely, depending on the type of **Linux** distribution, its version, set of **SELinux** politics and user settings. To receive more detailed information on compilation of politics you may refer to corresponding documentation on your **Linux** distribution.

To create necessary politics :

1. Create new **SELinux** policy source file (.te file). This file define the access rules related to described module. You can create necessary politics:
   - Using **policygentool** utility. To do this, specify two parameters: the name of the policy module (interaction with which has to be adjusted) and the full path to the corresponding executable.

Please note that **policygentool** utility which included in `selinux-policy` package in **Red Hat Enterprise Linux** and **CentOS Linux**, may not work correctly. In this case, use utility **audit2allow**.

Example:

For **Dr.Web Scanner**:

```
# policygentool drweb-scanner /opt/drweb/
drweb.real
```

For **Dr.Web Daemon**:

```
# policygentool drweb-daemon /opt/drweb/
drwebd.real
```

You will be prompted to enter a few common domain characteristics, and for each module three files will be created: `[module_name].te`, `[module_name].fc` and `[module_name].if`.

- Using **audit2allow** utility. This utility generates policy modules based on reports of denial of access from system log files. Reports can be searched automatically in system log files or you can set the path to log file manually.

In general, when using the `audit` daemon, audit log located in `/var/log/audit/audit.log` file. Otherwise, AVC messages are stored in `/var/log/messages` log file.

audit2allow utility is included in `policycoreutils-python` package (for **RedHat Enterprise Linux**, **CentOS**, **Fedora**) or in `python-sepolgen` package (for **Debian**, **Ubuntu**).

Example:

```
# audit2allow -M -i /var/log/audit/audit.
log drweb
```

In this example, **audit2allow** search AVC messages in `audit.log` file.

Example:

```
# audit2allow -a -M drweb
```

In this example, **audit2allow** search AVC messages in system log files automaticaly.

In both cases, **audit2allow** creates two files: **SELinux** source file of policy (drweb.te) and compiled policy module drweb.pp. If you want to make changes to the access rules of **Dr.Web for Unix Internet gateways** components, then edit drweb.te and go to step 2. If you don't want to change policy file, go to step 4 to install drweb.pp policy module.

2. Using **checkmodule** utility, create a binary representation (.mod file) of the policy source file. Please note that for successful policy compilation a checkpolicy package must be installed on the system.

   Example:

   ```
   # checkmodule -M -m -o drweb.mod drweb.te
   ```

3. Create policy module (drweb.pp) by using **semodule_package** utility.

   Example:

   ```
   # semodule_package -o drweb.pp -m drweb.mod
   ```

4. To install the new policy module into the module store, use the **semodule** utility.

   Example:

   ```
   # semodule -i drweb.pp
   ```

It is also possible (but **not recommended!**) to set 1 as a value of allow_execheap environment variable to set up operation of **Dr.Web Scanner** and **Dr.Web Daemon** in **SELinux**. allow_execheap variable allow or deny execution of data in memory heap for all applications that runs in *unconfined domain*.

To set value of `allow_execheap` variable, execute the following command:

```
# setsebool -P allow_execheap=1
```

Software Registration. License Key File

User privileges for using **Dr.Web for Unix Internet gateways** solution are controlled by special file called license key file.

License key file contains the following information:

- list of **Dr.Web for Unix Internet gateways** components licensed to user;
- license expiration date;
- other restrictions (for example, number of protected workstations).

License key file has `*.key` extension and by default must be placed in a directory for **Dr.Web for Unix Internet gateways** executable files.

License key file is digitally signed to prevent its editing. Edited license key file becomes invalid. It is not recommended to open your license key file in text editors to avoid its accidental corruption.

Users who have purchased **Dr.Web for Unix Internet gateways** solution from **Doctor Web** certified partners obtain the license key file. The parameters of the key file are specified according to the license user has paid for. The license key file contains the name of the user (or a company name), and the name of the selling company.

For evaluation purposes users may also obtain a demo key file. It allows user to enjoy full functionality of the **Dr.Web for Unix Internet gateways** solution, but has a limited term of use, and no technical support is provided.

License key file may be supplied as:

- a `drweb32.key` file license key for workstations, or as a zip archive containing license key file in case of purchasing **Dr.Web for Unix Internet gateways** as a standalone product;
- a zip-archive, which contains a key file for the Server

(enterprise.key) and a key file for workstations (agent.key) in case of purchasing **Dr.Web for Unix Internet gateways** as a part of **Dr.Web Enterprise Security Suite**.

License key file may be received using one of the following ways:

- sent by e-mail as a ZIP-archive containing license key file with *.key extension (usually after registration on the web site). Extract license key file using the appropriate archiving utility and copy/move it to the directory for **Dr.Web for Unix Internet gateways** executable files (default directory for UNIX systems is %bin_dir);
- included into the distribution package;
- supplied on a separate media as a file with *.key extension. In this case user must copy it manually to the %bin_dir directory.

License key file is sent to user via e-mail usually after registration on the web site (web site location is specified in registration card accompanying the product). Visit the site, fill in the web form with your customer data and submit your registration serial number (printed on the registration card). As a result of this procedure license is activated, and license key file is created for the serial number provided. Then it is sent to user on the e-mail address specified.

It is recommended to keep license key file until it expires, and use it when reinstalling or repairing **Dr.Web for Unix Internet gateways** solution installation. If the license key file is damaged or lost, it can be recovered by the same procedure as during license activation. In this case you must use the same product serial number and customer data you have entered during the registration, only e-mail address can be changed (in this case license key file will be sent to the new e-mail address). If serial number matches any entry in **Dr.Web for Unix Internet gateways** database, the corresponding key file will be dispatched to user by automatic system using e-mail address provided.

Registration with the same product serial number can be performed up to 25 times. If you need to recover lost license key file after 25th registration, you must make a request for license key file

recovery on http://support.drweb.com/request/, and also specify all data used during registration, valid e-mail address and detailed description of the situation. Request will be considered by **Dr.Web for Unix Internet gateways** technical support service engineers, and after approval license key file will be provided to user via automatic support system or dispatched via e-mail.

Path to license key file of the certain component must be specified as a **Key** parameter value in corresponding configuration file (`drweb32.ini`).

Example:

```
Key = %bin_dir/drweb32.key
```

If license key file specified as a **Key** parameter value is failed to read (wrong path, permission denied), expired, blocked or invalid, the corresponding component terminates.

When less than two weeks left until the license expiration, **Dr.Web Scanner** outputs warning message at start and **Dr.Web Daemon** notifies user via e-mail. Messages are sent at every startup, restart or reload of the **Daemon** for every license key file installed. To enable this option you must set up **MailCommand** parameter in `[Daemon]` section of `drweb32.ini` configuration file.

If you want to use key file from the different location, you must specify full path to it in the value of **LicenseFile** parameter from the `[StandaloneMode]` of the **Dr.Web Agent** configuration file (refer to the [StandaloneMode] Section description).

Dr.Web Updater

You can use **Dr.Web Updater** to update automatically virus databases and content-specific black and white lists of Internet resources for the **Dr.Web for Unix Internet gateways** solution. Updating module is implemented as a console script `update.pl` written in Perl, and you can find it in the directory containing **Dr.Web for Unix Internet gateways** executable files.

Dr.Web Updater is require installed **Perl** 5.8.0 or later.

Dr.Web Updater settings are stored in `[Updater]` section of the `drweb32.ini` configuration file in `%etc_dir` directory. If you want to use alternative configuration file, specify the full path to it with command line parameter at start.

To run the script use the following command:

```
$ %bin_dir/update.pl [parameters]
```

Allowed parameters are listed in chapter Command Line Parameters.

Updating

To ensure reliable protection **Dr.Web for Unix Internet gateways** solution requires regular updates of virus databases.

Dr.Web for Unix Internet gateways virus databases are stored in files with *.vdb extension. Update servers of **Dr.Web Global Updating System** (**Dr.Web GUS**) may also store them in lzma-archives. When new viruses are discovered, small files (only several KBytes in size) with database segments describing these viruses are released to provide quick and effective countermeasures.

Updates are the same for all supported platforms. There are daily "hot" updates (`drwtoday.vdb`) and regular weekly updates (`drwXXXYY.vdb`), where `XXX` is antivirus engine version number, and YY is a sequential number, beginning from 00 (for example, the

first regular update for version 6.0 will be named `drw60000.vdb`).

"Hot" updates are released daily or even several times a day to provide effective protection against new viruses. These updates are installed over the old ones: i.e. previous `drwtoday.vdb` file will be overwritten. When new regular update is released, all records from `drwtoday.vdb` are copied to `drwXXYY.vdb`, and new empty `drwtoday.vdb` file is issued.

If you want to update virus databases manually, you must install all missing regular updates first, and then overwrite `drwtoday.vdb` file.

To add the update to the main virus databases, place the corresponding file to the directory for **Dr.Web for Unix Internet gateways** executable files (`/var/drweb/bases/` by default) or to any other directory specified in the configuration file.

Signatures for virus-like malicious programs (adware, dialers, hacktools, etc.) are supplied in two additional files - `drwrisky.vdb` and `drwnasty.vdb` - with the structure similar to virus databases. These files are also updated regularly: `dwrXXYYY.vdb` and `dwnXXYYY.vdb` are for regular updates, and `dwrtoday.vdb` and `dwntoday.vdb` are for "hot" updates.

From time to time (as new antivirus techniques are developed), new versions of the antivirus package are released, containing the updated algorithms, implemented in the antivirus engine **Dr.Web Engine**. At the same time, all released updates are brought together, and the new package version is completed with the updated main virus databases with descriptions of all known viruses. Usually, when upgrading the package to the new version the databases remain portable: i.e. new bases can be linked up to the old **Dr.Web Engine**. Please note that this does not guarantee detection or curing of new viruses, as it requires upgrading of algorithms in the **Dr.Web Engine**.

With regular updating virus databases have the following structure:

- `drwebase.vdb` – general virus database, received with the new version of the package;

- drwXXXYY.vdb – regular weekly updates;
- drwtoday.vdb – "hot" updates released daily or several times a day;
- drwnasty.vdb – general database of other malware, received with the new version of the package;
- dwnXXXYY.vdb – regular weekly updates for other malware;
- dwntoday.vdb – "hot" updates for other malware;
- drwrisky.vdb – general database of riskware, received with the new version of the package;
- dwrXXXYY.vdb – regular weekly updates for riskware;
- dwrtoday.vdb – "hot" updates for riskware.

Virus databases can be automatically updated using **Dr.Web Updater** module (%bin_dir/update.pl). After installation user crontab file /etc/cron.d/drweb-update will be created to run **Updater** every 30 minutes to ensure regular updates and maximum protection. You can modify this file to change update period.

Content-specific black and white lists of Internet resources are stored in files with dws extension:

- dwfXXXNN.dws – black list, where XXX stands for an abbreviation of the main content theme (e.g. prn for "porno", mlw for "malware"), and NN is the index number of the list;
- white_dwfXXX.dws – white list, where XXX stands for an abbreviation of the main content theme.

Update servers of **Dr.Web GUS** may also store these files in lzma-archives. If you don't want to update these lists, you should delete or move icapd.drl file from the directory containing drl-files (path to this directory is specified in the **DrlDir** parameter from the [Updater] section of drweb32.ini configuration file).

Cron Configuration

For Linux: a special file with user settings will be created in the `/etc/cron.d/` directory during installation of the software complex. It will enable interaction between **cron** and **Dr.Web Updater**.

In the task created for **crond**, vixie cron syntax is used. If you use different **cron** daemon, such as **dcron**, it is necessary to manually create a task to automatically start the **Dr.Web Updater** module.

For FreeBSD and Solaris: manual configuration of **cron** is required to enable its interaction with **Dr.Web Updater**.

For example, when you use **FreeBSD** you may add the following string to **crontab** of `drweb` user:

```
*/30 * * * * /usr/local/drweb/update.pl
```

If you work with **Solaris**, the following set of commands is used:

```
# crontab -e drweb
# 0,30 * * * * /opt/drweb/update.pl
```

Please note that by default **cron** daemon launch **Dr.Web Updater** module every 0 and 30 minutes of every hour. This can cause increased load on the update servers of **Dr.Web GUS** and cause update delays. To avoid such situation, it is recomended to change default values to arbitrary.

Command Line Parameters

- `--help` – used to show brief usage summary.
- `--ini` – used to specify usage of another (not default) configuration file. To use another configuration file, specify full path to it with `--ini` command line parameter. If the name of the configuration file is not specified, `%etc_dir/drweb32.ini` is used.

  Example:

  ```
  $ /opt/drweb/update.pl --ini=/path/to/conf_file
  ```

- `--what` – allows to temporarily override value of **`Section`** parameter on **Updater**'s launch. Parameter will take effect until next start of the script. Possible values: `Scanner` or `Daemon`.

  Example:

  ```
  $ /opt/drweb/update.pl --what=Scanner
  ```

- `--components` – used to view a list of all product components available for update.

  Example:

  ```
  $ /opt/drweb/update.pl --components
  ```

- You can also use command line parameter `--not-need-reload`:
  - without this parameter all daemons of **Dr.Web for Unix Internet gateways** will be restarted after **`update.pl`** script finishes its work, if some components of **Dr.Web for Unix Internet gateways** have been updated, removed or added;
  - if `--not-need-reload` parameter is specified without any value, after the completion of **`update.pl`** script work, any daemon of **Dr.Web for Unix Internet gateways** won't be restarted;
  - if `not-need-restart` parameter specify names of the

daemons, they will not be restarted after the completion of **update.pl** script work. Names of non-restarted daemons must are listed with comma separation, without white spaces, case insensitive.

Example:

```
$ /opt/drweb/update.pl --not-need-reload=drwebd
```

Blocking Updates for Selected Components

You can configure **Dr.Web Updater** to block updates for selected components of your solution **Dr.Web for Unix Internet gateways**.

To view the list of available components, use `--components` command-line parameter:

Example:

```
# ./update.pl --components

Available Components:
    agent
    drweb          (frozen)
    icapd          (frozen)
    vaderetro_lib
```

If updates for any component are blocked, that component will be marked as frozen. Frozen components will not be updated when **Dr.Web Updater** is ran.

Blocking updates

To block updates for specific component use `--freeze=<components>` command-line parameter, where `<components>` is a comma-delimited list of names of components to be frozen.

Example:

```
# ./update.pl --freeze=drweb
Updates for component 'drweb' are frozen.
Run command './updater --unfreeze=drweb' to start
updates again.
```

Unblocking updates

To once again enable updates for a frozen component, use `--unfreeze=<components>` command-line parameter, where `<components>` is a comma-delimited list of names of components to be unfrozen.

Example:

```
# ./update.pl --unfreeze=drweb
Updates for component 'drweb' are no longer frozen.
```

Unfreezing will not update the component.

Restoring Components

When updating components of your **Dr.Web for Unix Internet gateways** solution, back-up copies will be saved in **Dr.Web Updater** working directory. It enables you to restore any component to its previous state in case there are some problems with the update.

To restore component to a previous state, use `--restore=<components>` command-line parameter, where `<components>` is a comma delimited list of components to be restored.

Example:

```
# ./update.pl --restore=drweb

Restoring backup for component 'drweb'...
Updates for component 'drweb' are frozen.
Run command './updater --unfreeze=drweb' to start
updates again.

Backup for component 'drweb' has been restored!
Dr.Web (R) restore details:

Following files has been restored:
      /var/drweb/bases/drwtoday.vdb
      /var/drweb/bases/dwntoday.vdb
      /var/drweb/bases/dwrtoday.vdb
      /var/drweb/bases/timestamp
      /var/drweb/updates/timestamp
```

On restoring component will be automatically frozen. To enable updates for a restored component you need to unfreeze it.

Configuration File

Dr.Web Updater settings are stored in `Updater` section of configuration file (`drweb32.ini` by default) which is located in `%etc_dir` directory:

`Section [Updater]`

UpdatePluginsOnly = {logical}	With `Yes` value specified **Dr.Web Updater** will not update **Dr.Web Daemon** and **Dr.Web Scanner**. It will update only plug-ins. Default value: **UpdatePluginsOnly** = No

Section = {Daemon | Scanner}	Specifies from which section of configuration file **Dr.Web Updater** will take settings to determine path to key file, paths to virus databases, etc. Possible values: `Scanner, Daemon`. Value of this parameter can be temporarily overriden by `--what` command line parameter. Parameter will take effect until next start of the script. Default value: **Section** = Daemon
ProgramPath = {path to file}	Path to **Dr.Web Daemon** or **Dr.Web Scanner**. It is used by **Dr.Web Updater** for getting the product version and API information of the installed executable file. Default value: **ProgramPath** = %bin_dir/drwebd
SignedReader = {path to file}	Path to program which is used to read digitally signed files. Default value: **SignedReader** = %bin_dir/read_signed
LzmaDecoderPath = {path to directory}	Path to the directory containing program used for unpacking of lzma-archives. Default value: **LzmaDecoderPath** = %bin_dir/
LockFile = {path to file}	Path to lock file used to prevent sharing of certain files during their processing by **Dr.Web Updater**. Default value: **LockFile** = %var_dir/run/update.lock

CronSummary = {logical}	If you specify Yes, **Dr.Web Updater** will output update report for each session to stdout. This mode can be used to send notifications to administrator by email, if **Dr.Web Updater** is run by the cron daemon. Default value: **CronSummary** = Yes
DrlFile = {path to file}	Path to the file (*.drl) containing list of accessible updating servers of **Dr.Web GUS**. **Dr.Web Updater** randomly selects a server from this list to download updates. Detailed about updates downloading see in chapter Updating Process. This file is signed by **Doctor Web** and should not be modified by the user. It is updated automatically. Default value: **DrlFile** = %var_dir/bases/update.drl
CustomDrlFile = {path to file}	Path to the file (*.drl) with the alternative list of accessible updating servers of **Dr.Web GUS**. **Dr.Web Updater** also randomly selects a server from this list to download updates. Detailed about updates downloading see in chapter Updating Process. This file is signed by **Doctor Web** and should not be modified by the user. It is updated automatically. Default value: **CustomDrlFile** = %var_dir/bases/custom.drl

FallbackToDrl = {logical}	To allow using of file from **DrlFile** in case it was not possible to connect to no one of the servers which are listed in the **CustomDrlFile**. If specified value is No, file specified in **DrlFile** is not used. In case the file specified in **CustomDrlFile** doesn't exist, file specified in **DrlFile** is used regardless of value specified for **FallbackToDrl** parameter. Detailed about updates downloading see in chapter Updating Process. Default value: **FallbackToDrl** = Yes
DrlDir = {path to directory}	Path to the directory containing drl files with lists of update servers **Dr.Web GUS** for each plug-in. These files are signed by **Doctor Web** and should not be modified by the user. Default value: **DrlDir** = %var_dir/drl/
Timeout = {numerical value}	Maximum waiting period for downloading updates from selected server of **Dr.Web GUS** in seconds. Default value: **Timeout** = 90
Tries = {numerical value}	Number of attempts to be made by **Dr.Web Updater** to establish a connection with the selected update server. Default value: **Tries** = 3

ProxyServer = {host name | IP address}	Host name or IP address of the proxy server which is used for Internet access. If the proxy server is not used the value of this parameter must be empty. Default value: **ProxyServer** =
ProxyLogin = {string}	User login for used proxy server (if it requires authentication). Default value: **ProxyLogin** =
ProxyPassword = {string}	The password for used proxy server (if it requires authentication). Default value: **ProxyPassword** =
LogFileName = {syslog | file name}	Path to log file name. You can specify `syslog` as log file name and logging will be carried out by `syslogd` system service. In this case you must also specify **SyslogFacility** and **SyslogPriority** parameters. Default value: **LogFileName** = syslog
SyslogFacility = {syslog label}	Log type label which is used by `syslogd` system service. Default value: **SyslogFacility** = Daemon
LogLevel = {log level}	Log verbosity level.

	Following levels are allowed: • Quiet • Error • Warning • Info • Debug • Verbose Default value: **LogLevel** = Info
IcapdPidFile = {path to file}	Path to **Dr.Web ICAPD** (drweb-icapd) PID file. Default value: **IcapdPidFile** = %var_dir/run/drweb_icapd.pid
BlacklistPath = {path to directory}	Path to directory with .dws files. Default value: **BlacklistPath** = %var_dir/dws
AgentConfPath = {path to file}	Path to **Dr.Web Agent** configuration file. Default value: **AgentConfPath** = %var_dir/agent.conf
ExpiredTimeLimit = {numerical value}	Number of days before license expiration during which **Dr.Web Updater** will be attempting to update license key file. Default value: **ExpiredTimeLimit** = 14

ESLockfile = {path to file}	Path to lock file. If the lock file exists, **Dr.Web Updater** will not be automatically initialized by `cron` daemon. Default value: **ESLockfile** = `%var_dir/run/es_updater.lock`

Updating Process

Updating is done in following stages:

1. **Dr.Web Updater** is reading configuration file (`drweb32.ini` by default, or specified with `--ini` command line argument).
2. **Dr.Web Updater** uses parameters from section `[Updater]` of configuration file (see description above), and parameters **EnginePath**, **VirusBase**, **UpdatePath** and **PidFile**.
3. **Dr.Web Updater** selects updates server of **Dr.Web GUS** for updates downloading. The updates server will be selected by following way:
   - Reading the files with lists of the updates servers (`drl`), specified in the **DrlFile** and **CustomDrlFile** parameters;
   - If both files are not accessible, then updating process will be stopped and ended;
   - If only one (any) file is accessible, then it will be used regardless of value specified for **FallbackToDrl** parameter;
   - If both files are accessible, then updates servers will be selected at beginning from file specified in **CustomDrlFile** parameter;

- If it is not possible to connect to no one of the servers from the file specified in **CustomDrlFile** parameter, and value of **FallbackToDrl** is specified to `Yes`, then servers from the file specified in **DrlFile** parameter, will be tried to connecting. In opposite case updating will be stopped and ended.

4. **Dr.Web Updater** make connection attempts to random chosen servers from the selected list until connection attempt to the server won't appear successful (at connection attempt **Dr.Web Updater** waits the answer from the server during the time period specified in the **Timeout** parameter).
5. Module requests from connected server of **Dr.Web GUS** the list of available updates, and then lzma archives of its. In case archives are not presented on the server, the updates will be downloaded as `vdb` files. For lzma-archives unpacking **lzma** utility is used. Path to the directory which contains utility is specified in **LzmaDecoderPath** parameter.
6. Received (and unpacked) updates will be saved in directories as described in chapter Updating.

Dr.Web Agent

Dr.Web Agent is a resident module used to manage settings of various modules of **Dr.Web for Unix Internet gateways** solution, define antivirus policy depending on available licenses and collect virus statistics. When separate modules of **Dr.Web for Unix Internet gateways** are started, or settings are changed, **Dr.Web Agent** sends to these modules all necessary configuration information. **Dr.Web Agent** can interact with other modules by exchanging control signals.

Since all the components of **Dr.Web for Unix Internet gateways** solution (except for **Dr.Web Monitor**) receive their settings via **drweb-agent** module, it must be ran before all these modules, but after the **drweb-monitor** module.

Pleas note, that when several parameters with the same name are specified in configuration file, **Dr.Web Agent** unites them in one string with comma as delimiter. You can also use backslash symbol "\" to define parameter value in several lines. New line after backslash will be added to the previous line when **Dr.Web Agent** reads configuration information.

Operation Mode

If necessary, **Doctor Web** solutions can be used to connect to corporate or private anti-virus networks managed by **Dr.Web Enterprise Security Suite** (**Dr.Web ESS**). To operate in such central protection mode, you do not need to install additional software or uninstall your **Dr.Web** solution.

To provide you with this option, **Dr.Web Agent** can operate in one of the two following modes:

- **Standalone mode** when a protected computer is not included in an anti-virus network or managed remotely. In this mode, configuration files and key files reside on local drives, and **Agent** is controlled in full from the protected computer.

- **Enterprise mode** (or central protection mode), when protection of the computer is managed from a central protection server. In this mode, some features and settings of **Dr.Web for Unix Internet gateways** may be modified and blocked for compliance with a general (e.g., company) security policy. Licence key file for operation in this mode is received from the central protection server. Your personal key file on the local computer is not used

To use central protection mode

1. Contact the anti-virus network administrator of your company for a public key file and parameters of connection to the central protection server.
2. In the **Dr.Web Agent** configuration file (by default, `%etc_dir/agent.conf`), set up the following parameters in the `[EnterpriseMode]` section:
   - Set the **`PublicKeyFile`** parameter to location of a public key file received from anti-virus network administrator (usually, `%var_dir/drwcsd.pub`).This file includes an encryption public key for the access to **Dr.Web ESS**. If you are the anti-virus network administrator, you can locate the file in the corresponding directory on the **Enterprise Server**.
   - Set the **`ServerHost`** parameter to IP-address or host name of the **Enterprise Server**.
   - Set the **`ServerPort`** parameter to the **Enterprise Server** port number (usually, `2193`).
3. To connect to central protection server, set the **`UserEnterpriseMode`** parameter to `Yes`.

In the central protection mode, some features and settings of **Dr.Web for Unix Internet gateways** may be modified and blocked in compliance with the general security policy. A key file for operation in this mode is received from central protection server. Your personal key file on a local computer is not used.

To run **Dr.Web Agent** in central protection mode `drweb-agent-es` package must be installed.

For **Dr.Web for Unix Internet gateways** to fully support central protection mode, you must also set **Dr.Web Monitor** to operate in enterprise mode. For more details, see Operation Mode for **Dr.Web Monitor**.

To use standalone mode

1. Make sure that all parameters in the `[StandaloneMode]` section of the **Dr.Web Agent** configuration file (by default, `%etc_dir/agent.conf`) are set properly.
2. In the `[EnterpriseMode]` section of the **Dr.Web Agent** configuration file, set the **`UseEnterpriseMode`** parameter to `No`.

   On switching to this mode, all settings of **Dr.Web for Unix Internet gateways** are unlocked and restored to their previous or default values. You can once again access all features of **Dr.Web for Unix Internet gateways** solutions and configure them in full.

For correct operation in standalone mode, **Dr.Web for Unix Internet gateways** requires a valid personal key file. The key files received from central protection server cannot be used in this mode.

Joint usiage of Dr.Web for Unix Internet gateways and Dr.Web Anti-virus for Linux solutions in central protection mode

You can safely use all server UNIX **Dr.Web** solution on the single host in central protection mode. **Dr.Web Anti-virus For Linux** however will be in conflict with server solutions. To run **Dr.Web for Unix Internet gateways** or other **Dr.Web** server solutions in the central protection mode on the same host with **Dr.Web Anti-virus For Linux**, you will need to rename amc files for **Dr.Web Anti-virus For Linux** (`drweb-cc.amc`, `drweb-spider.amc`).

Due to implementation details, it is not possible to run **Dr.Web for Unix Internet gateways** and **Dr.Web Anti-virus for Linux** in central protection mode on one host simultaneously. To enable central protection mode in **Dr.Web for Unix Internet gateways** you should turn **Dr.Web Anti-virus for Linux** to standalone mode and delete or move to another directory files `%etc_dir/agent/drweb-cc.amc` and `%etc_dir/agent/drweb-spider.amc`.

It is recommended to keep this files as a backup in directory other than `%etc_dir/agent` if you are going to run **Dr.Web Anti-virus for Linux** in central protection mode later. In this case, set **Dr.Web for Unix Internet gateways** into standalone mode, copy back-ups of `drweb-cc.amc` and `drweb-spider.amc` files to directory `%etc_dir/agent/` and follow the instructions given in **Dr.Web Anti-virus for Linux** User Guide.

Command Line Parameters

To run **Dr.Web Agent**, use the following command:

```
drweb-agent [parameters]
```

where the following `parameters` are allowed:

Short case	Extended case	Arguments
`-h`	`--help`	

Short case	Extended case	Arguments
Description: Show information about supported command line parameters on the screen and terminate module		
-v	--version	
Description: Show **Dr.Web Agent** version on the screen and terminate module		
-u	--update-all	
Description: Start updating all components of **Dr.Web for Unix Internet gateways**		
-f	--update-failed	
Description: Start updating all components of **Dr.Web for Unix Internet gateways**, for which updating in standard mode was failed		
-C	--check-only	
Description: Check correctness of **Dr.Web Agent** configuration. This parameter can't be used if in the system already exist started copy of **Dr.Web Agent** process		
-c	--conf	<path to file>
Description: Module must use the specified configuration file		
-d	--droppwd	
Description: Discard registration data used for connecting to **Dr.Web Enterprise Server** (username, password). At the next attempt of connecting to **Dr.Web Enterprise Server** will be started process of new workstation registration		
-p	--newpwd	
Description: Change username and password for connecting to **Dr.Web Enterprise Server**		

Short case	Extended case	Arguments
-s	--socket	<path to file>
Description: Use for interaction with controlled modules the specified socket		
-P	--pid-file	<path to file>
Description: Use the specified file as PID file of **Dr.Web Agent**		
-e	--export-config	<application name>
Description: Export configuration of the application, name of which is specified, to **Dr.Web Enterprise Server**. As an application name must be used string <application name> from Application "<application name>" section header in amc file (about this see in chapter Interaction with other Software Modules). This parameter can't be used if in the system already exist started copy of **Dr.Web Agent** process. Also it can't be used for export of **Dr.Web Antivirus for Linux** configuration.		

Configuration File

Setup of **Dr.Web Agent** is performed using its configuration file %etc_dir/agent.conf.

General principles of the **Dr.Web for Unix Internet gateways** configuration files organization see in chapter Configuration files.

[Logging] Section

In [**Logging**] section parameters responsible for logging information about operation of **Dr.Web Agent** are collected:

[Logging]

Level = {log level}	**Dr.Web Agent** log verbosity level. Following levels are allowed: • Quiet • Error

	• Alert • Info • Debug Default value: **Level** = Info
IPCLevel = {log level}	Log verbosity level of IPC library. Following levels are allowed: • Quiet • Error • Alert • Info • Debug Default value: **IPCLevel** = Error
SyslogFacility = {syslog label}	Log type label which is used by syslogd system service. Default value: **SyslogFacility** = Daemon
FileName = {path to file | syslog}	Path to log file name. You can specify syslog as log file name and logging will be carried out by syslogd system service. In this case you must also specify **SyslogFacility** parameter. Default value: **FileName** = syslog

[Agent] Section

This section contains general settings of **Dr.Web Agent**:

[Agent]

MetaConfigDir = {path to directory}	Directory name where meta-configuration files of **drweb-agent** reside. These files contain settings defining **Dr.Web Agent** interaction with other modules of **Dr.Web** software complex. Meta-configuration files are supplied by **Dr.Web** developers and do not need to be modified. Default value: **MetaConfigDir** = %etc_dir/agent/
UseMonitor = {logical}	Yes value tells **drweb-agent** that **Dr.Web Monitor** is used as a part of **Dr.Web for Unix Internet gateways** solution. Default value: **UseMonitor** = Yes
MonitorAddress = {address}	Socket used by **Dr.Web Agent** to interact with **Dr.Web Monitor** (parameter value must be the same as **Address** parameter value from **Dr.Web Monitor** configuration file). Default value: **MonitorAddress** = local:%var_dir/ipc/.monitor
MonitorResponseTime = {numerical value}	Maximum time to get a response from **drweb-monitor** module in seconds. If **Dr.Web Monitor** doesn't respond during this period of time, **Dr.Web Agent** considers **drweb-monitor** not running and stops trying to establish connection with **Dr.Web Monitor**.

	Default value: **MonitorResponseTime** = 5
PidFile = {path to file}	Filename where **Dr.Web Agent** PID is written when **Dr.Web Agent** is run. Default value: **PidFile** = %var_dir/run/drweb-agent.pid

[Server] Section

In [**Server**] section parameters defining interaction of **Dr.Web Agent** with other modules of **Dr.Web for Unix Internet gateways** solution are collected:

[Server]

Address = {address}	Socket used by **Dr.Web Agent** to interact with other modules of software complex. Multiple sockets can be specified, with comma used as a delimiter. Default value: **Address** = local:%var_dir/ipc/.agent, inet:4040@127.0.0.1
Threads = {numerical value}	Number of **drweb-agent** simultaneous threads. This parameter controls maximum number of simultaneous connections to modules reporting virus statistics to **Dr.Web Agent**. Value of this parameter cannot be changed using SIGHUP signal. If 0 is specified, number of threads is unlimited (not recommended). Default value: **Threads** = 2

Timeout = {numerical value}	Maximum time in seconds for establishing connection between **Dr.Web Agent** and other **Dr.Web** modules. If 0 is specified, time for establishing connection is unlimited. Default value: **Timeout** = 15

[EnterpriseMode] Section

[**EnterpriseMode**] section contains parameters defining **Agent** operation in **Enterprise** mode:

```
[EnterpriseMode]
```

UseEnterpriseMode = {logical}	With Yes value specified **Dr.Web Agent** works in Enterprise mode, with No value specified it works in Standalone mode. Default value: **UseEnterpriseMode** = No
ComputerName = {text value}	Computer name in **Anti-virus network**. Default value: **ComputerName** =
VirusbaseDir = {path to directory}	Path to directory where virus databases are located. Default value: **VirusbaseDir** = %var_dir/bases
PublicKeyFile = {path to file}	Path to file with public key to access **Dr.Web Enterprise Server**. Default value: **PublicKeyFile** = %bin_dir/drwcsd.pub

ServerHost = {IP address}	**Dr.Web Enterprise Server** IP address. Default value: **ServerHost** = 127.0.0.1
ServerPort = {port number}	Port number to access **Dr.Web Enterprise Server**. Default value: **ServerPort** = 2193
CryptTraffic = {Yes | Possible | No}	Encryption of traffic between **Dr.Web Enterprise Server** and **Dr.Web Agent**: • Yes – mandatory encryption • Possible – encryption if it is possible • No – do not encryption Default value: **CryptTraffic** = possible
CompressTraffic = {Yes | Possible | No}	Compression of traffic between **Dr.Web Enterprise Server** and **Dr.Web Agent**: • Yes – mandatory compression • Possible – compression if it is possible • No – do not compression Default value: **CompressTraffic** = possible
CacheDir = {path to directory}	Path to directory, where different utility files are stored: configuration files, files with access privileges for applications managed by **Dr.Web Enterprise Server**, files with registration information on **Dr.Web Enterprise Server**, etc. Default value: **CacheDir** = %var_dir/agent

[StandaloneMode] Section

In [**StandaloneMode**] section parameters defining **Dr.Web Agent** operation in **Standalone** mode are collected:

```
[StandaloneMode]
```

StatisticsServer = {text value}	Address (URL) of virus statistics server If not specified, then statistics will not be sent. Default value: **StatisticsServer** = stat.drweb.com:80/update
StatisticsUpdatePeriod = {numerical value}	Period in minutes of statistics updating. Value cannot be great than 5 Default value: **StatisticsUpdatePeriod** = 10
StatisticsProxy = {hostname | IP address}	IP address or host name of proxy server for virus statistics sending. Please note that if the value is not explicitly specified, value of `http_proxy` environment variable is used. **Example**: StatisticsProxy = localhost:3128 Default value: **StatisticsProxy** =
StatisticsProxyAuth = {text value}	Authentication string (<username>:<password>) for access to proxy server. **Example**: StatisticsProxyAuth = test:testpwd

	Default value: **StatisticsProxyAuth** =
UUID = {text value}	Unique user identifier for virus statistics server http://stat.drweb.com/. Please note that this parameter is mandatory for statistics transfer – so if you want to enable this function, you must specify personal UUID as a value of this parameter (md5 sum of license key file is usually used for this purpose). Default value: **UUID** =
LicenseFile = {paths to files}	Location of **Dr.Web** license key files or demo key files. Paths in the list are separated by commas (if more than one). Default value: **LicenseFile** = %bin_dir/drweb32.key

[Update] Section

[Update] section contains parameters that define how to perform update of **Dr.Web for Unix Internet gateways** components via **Dr.Web Enterprise Server**:

[Update]

CacheDir = {path to directory}	Directory where **Dr.Web Agent** temporarily stores downloaded update files. Default value: **CacheDir** = %var_dir/updates/cache

Timeout = {numerical value}	Maximum time on seconds for **Dr.Web Agent** to process downloaded update files. If 0 is specified, time for process is unlimited. Default value: **Timeout** = 120
RootDir = {path to directory}	Path to root directory. Default value: **RootDir** = /

Refer to *Administrator Manual* for **Dr.Web ESS** for more information.

Running Dr.Web Agent

Please note that if you select "Configure Services" option in the conversation with the post-install script, all services including **Dr.Web Agent** will be started automatically.

When **Dr.Web Agent** starts with default settings, the following actions are performed:

- **Dr.Web Agent** searches and loads its configuration file. If the configuration file is not found, **Dr.Web Agent** terminates.
- If the parameters in the [EnterpriseMode] section are set correctly and **Dr.Web for Unix Internet gateways** solution is operating within **Anti-virus network**, then **Dr.Web Agent** starts in enterprise mode. Otherwise, if parameters in the [Standalone] section are set correctly, **Dr.Web Agent** starts in the standalone mode. If the parameters in the [Standalone] section are not set, **Dr.Web Agent** terminates.
- Socket for interaction of **Dr.Web Agent** with other **Dr.Web** modules is created. If a TCP socket is used, then there can be several connections (loading continues if at least one connection is established). If a UNIX socket is used, it can only

be created if the user, whose privileges are used to run **drweb-agent**, has read and write access to its directory. If socket cannot be created, **Dr.Web Agent** terminates.

Further loading process depends on the selected operation mode.

If **Dr.Web Agent** operates in **enterprise mode**:

- **Dr.Web Agent** connects to **Dr.Web Enterprise Server**. If the server is unavailable or authorization process fails during first time connection, **Dr.Web Agent** terminates. If **Dr.Web Agent** had worked previously with this server, but it's temporary unavailable (for example, in the event of connection problems), **Dr.Web Agent** use backup copies of configuration files received from the server earlier.
- If connection is established, **Dr.Web Agent** receives key files and settings from **Dr.Web Enterprise Server**. After all setting and key files are received, **Dr.Web Agent** is ready for work.

If **Dr.Web Agent** operates in the **standalone mode**, then meta-configuration files that define **Dr.Web Agent** interaction with other **Dr.Web** modules are loaded. Location of meta-configuration files is set in the **MetaConfigDir** parameter in the [Agent] section of the **Dr.Web Agent** configuration file. When meta-configuration files are successfully loaded, **Dr.Web Agent** is ready for work.

Interaction with other Software Modules

Interaction with other software modules is performed by **Dr.Web Agent**'s metaconfiguration files (amc-files). These files describe configuration parameters, which values will be received by respective **Dr.Web** modules from **Dr.Web Agent**.

Description of each module can be found in Application section named after this module. At the end of the section **EndApplication** must be specified.

The following parameters must be present in the description of the module:

- **id**: identifier of the module in **Dr.Web ESS**.
- **ConfFile**: path to the configuration file of the module.
- **Components**: description of the component. At the end of this section `EndComponents` must be specified. For each component its name, list of the sections in the configuration file and the parameters in these sections necessary for proper operation of the component are specified. The list of sections and parameters is comma separated.
  To describe individual parameters properly you must specify full path to them (e.g. `Quarantine/Path`). In description of sections only their names must be specified (e.g. `General`).
  Back slash (\) in descriptions of sections and parameters is used to denote line breaks.
  If all settings from the configuration file are necessary to a component, it is enough to specify instead of the list of sections and/or parameters a path "/*".

Example of amc-file for Dr.Web ICAPD for Linux:

```
Application "ICAPD"
      id  49
      ConfFile  "/etc/drweb/drweb-icapd.ini"
      Components
                  drweb-icapd Icapd
    EndComponents
EndApplication
```

Integration with Dr.Web Enterprise Security Suite

There are two possible situations which require integration of **Dr.Web for Unix Internet gateways** solution with **Dr.Web**

Enterprise Security Suite from system administrator:

- Setup and initial configuration of **Dr.Web for Unix Internet gateways** in existing **Dr.Web ESS** environment;
- Embedding of successfully functioning UNIX server with already installed and configured **Dr.Web for Unix Internet gateways** solution in **Dr.Web ESS** environment.

To make **Dr.Web for Unix Internet gateways** solution work in **Dr.Web ESS** environment, set up **Dr.Web Agent** and **Dr.Web Monitor** components for operation in `Enterprise` mode, and register the whole solution on **Dr.Web Enterprise Server**.

According to connection policy for new working stations (for more details refer to administrator manual for **Dr.Web Enterprise Security Suite**), UNIX server can be connected to **Dr.Web Enterprise Server** in two different ways:

- when new account is created by central protection server automatically;
- when corresponding account is created by administrator manually.

Setup of Components

To start up in `Enterprise` mode after installation it is necessary to specify the changes in local configuration files of **Dr.Web Agent** and **Dr.Web Monitor**.

For Dr.Web Agent

In `[EnterpriseMode]` section of **Dr.Web Agent** configuration file `%etc_dir/agent.conf` set the following parameter values:

- **`UseEnterpriseMode`** = `Yes`;
- **`PublicKeyFile`** = `%var_dir/drwcsd.pub` (encryption public key for the access to central protection server. Take this file from the corresponding directory of **Dr.Web Enterprise Server** and move it to the specified path);
- **`ServerHost`** = IP-address or host name of **Dr.Web**

Enterprise Server;

- **ServerPort** = Dr.Web Enterprise Server port (2193 by default).

For Dr.Web Monitor

In [Monitor] section of the Dr.Web Monitor configuration file %etc_dir/monitor.conf set the following parameter values:

- **UseEnterpriseMode** = Yes.

Automatic Creation of New Account by ES Server

When new account is created automatically:

1. When Dr.Web Agent is first started in Enterprise mode, it sends a request for the account details (station ID and password) to Dr.Web Enterprise Server;
2. If Dr.Web Enterprise Server is set to **Approve access manually** mode (used by default, for more details refer to administrator manual for Dr.Web ESS), system administrator must confirm registration of new station via web interface Dr.Web Control Center during one minute from an emergence of corresponding request;
3. After first start Dr.Web Agent records hash of station ID and password into file named pwd. This file is created in the directory that specified in **CacheDir** parameter of the [EnterpriseMode] section (default value is %var_dir/agent/);
4. Data from this file is used every time Dr.Web for Unix Internet gateways solution connects to Dr.Web Enterprise Server;
5. If you delete password file, repeated registration request will be made to Dr.Web Enterprise Server after next start of the Dr.Web Agent.

Manual Creation of New Account by Administrator

When new account is created manually:

1. Create new account on **Dr.Web Enterprise Server**: station ID is generated automatically and password must be specified manually (for more details refer to administrator manual for **Dr.Web ESS**).
2. Start **Dr.WebAgent** using command line parameter **--newpwd** (or **-p**) and type in the station ID and password. **Dr.Web Agent** records hash of station ID and password into file named `pwd`. This file is created in the directory that specified in **CacheDir** parameter of the [EnterpriseMode] section (default value is `%var_dir/agent/`).
3. Data from this file is used every time **Dr.Web for Unix Internet gateways** solution connects to **Dr.Web Enterprise Server**.
4. If you delete password file, the registration must be performed once again (with next start of **Dr.Web Agent**).

Configuring Components via Dr.Web Control Center (embedded in Enterprise Security Suite)

Configuration of **Dr.Web for Unix Internet gateways** and **Dr.Web Daemon** (antivirus plug-in, included in standard installation package) can be performed via **Dr.Web Control Center**.

In **Dr.Web Enterprise Security Suite** standard installation package the basic configuration files for **Dr.Web for Unix Internet gateways** and **Dr.Web Daemon** components for **Linux**, **FreeBSD** and **Solaris** are included. When you configure certain components via web interface (**Dr.Web Control Center**), values of corresponding parameters are changed in these configuration files on **Dr.Web Enterprise Server**. After that every time the components start, **Dr.Web Agent** requests and receives configuration from **Dr.Web Enterprise Server**.

Export of Existing Configuration to ES Server

Automatic export of configuration settings from local computer to **Dr.Web Enterprise Server** is possible via **Dr.Web Agent** operating in `Enterprise` mode. To export configuration use command line parameter **`--export-config`** (or **`-e`**).

You must specify the name of the component (`DAEMON`, `ICAPD`).

Example:

```
# %bin_dir/drweb-agent --export-config ICAPD
```

Starting up the System

To start up the system:

1. In **Dr.Web Control Center** interface open the page with **Monitor** settings and check **Daemon** and **ICAP** boxes to enable configuration of the corresponding components;
2. Start **Dr.Web Monitor** on local computer:

   For **Linux** and **Solaris**:

   ```
   # /etc/init.d/drweb-monitor start
   ```

   For **FreeBSD**:

   ```
   # /usr/local/etc/rc.d/00.drweb-monitor.sh start
   ```

Collection of Virus Statistics

Dr.Web Agent receives statistics on computer threats from controlled modules and sends it to the official **Doctor Web** website devoted to statistics: http://stat.drweb.com/ (if Internet

connection is available) or to **Dr.Web ESS** (if **Dr.Web Agent** is operating in enterprise mode). **Dr.Web Agent** needs the *unique user identifier* (UUID) to connect to this website. By default, license key file MD5 sum is used as a UUID. Also you can get a personal UUID from **Doctor Web Technical Support**. In this case, your UUID must be specified explicitly in the **Agent** configuration file.

Statistics are gathered only for **Dr.Web** modules that receive settings from **Dr.Web Agent**. Information on how to set up interaction with **Dr.Web Agent** can be found in chapters describing these modules.

On the statistics website, you can find the aggregate statistics for computer threats for a given server or for all servers supported by **Dr.Web Anti-virus for UNIX** or by **Dr.Web for Unix Internet gateways** solution with anti-virus plug-in. **Dr.Web Agent** can simultaneously process statistics for computer threats from several different **Dr.Web** products which are able to interact with **Dr.Web Agent**.

Statistics processing results contain information on the most frequently detected threats (overall percentage only for aggregate statistics and also number of detections for personalized statistics) for a given period.

Statistics is available in both HTML and XML formal. The second option is especially convenient when this data is going to be published on another web site, since it can be transformed according to web site's concept and design.

To get aggregate statistics on computer threats for all supported servers, visit http://stat.drweb.com/. You can view a list of detected threats for all supported servers (in descending order) with overall percentage of detections.

This web page may render differently depending on used browser.

The following illustration shows threats statistics.

Figure 15. Computer threats statistics

To alter search parameters and to repeat search

1. Select either **Mail** or **Files** flags to get the statistics about the computer threats detected in the e-mails or in files.
2. In the drop-down lists for **Start date** and **End date**, select choose **start/end date** and **time** for the period of interest.
3. In the **Top** field, enter the required number of rows in the statistics table (most frequently the detected threats will be shown).
4. Select **Plot graph** if you want to view statistics in graphical form.
5. Click **Query**. The file with aggregate statistics in the XML form can be found at http://info.drweb.com/export/xml/top

Example:

```
<drwebvirustop period="24" top="5"
  vdbaseurl="http://info.drweb.com/
virus_description/"
  updatedutc="2009-06-09 09:32:02">
 <item>
  <vname>Win32.HLLM.Netsky</vname>
  <dwvlid>62083</dwvlid>
  <place>1</place>
  <percents>34.201062139103</percents>
 </item>
 <item>
  <vname>Win32.HLLM.MyDoom</vname>
  <dwvlid>9353</dwvlid>
  <place>2</place>
  <percents>25.1303270912579</percents>
 </item>
 <item>
  <vname>Win32.HLLM.Beagle</vname>
  <dwvlid>26997</dwvlid>
  <place>3</place>
  <percents>13.4593034783378</percents>
 </item>
 <item>
  <vname>Trojan.Botnetlog.9</vname>
  <dwvlid>438003</dwvlid>
  <place>4</place>
  <percents>7.8644592583328</percents>
 </item>
 <item>
  <vname>Trojan.DownLoad.36339</vname>
  <dwvlid>435637</dwvlid>
  <place>5</place>
  <percents>7.31494163115527</percents>
 </item>
</drwebvirustop>
```

In this file, the following XML attributes are used:

- `period` – duration (in hours) of the statistics collection process;
- `top` – number of the most frequently detected threats in the statistics table (number of rows);
- `updatedutc` – last statistics' update time;
- `vname` – threat name;
- `place` – virus place in the statistics;
- `percents` – percentage of the detections.

The value of the period parameter and the sample size cannot be changed by user.

To get personalized threat statistics

Visit one of the following Web pages:

- For the statistics in HTML, go to http://stat.drweb.com/view/<UUID>. Personalized threat statistics page is similar to the aggregate threat statistics page.
- For the file with the personalized threat statistics in XML form, go to http://stat.drweb.com/xml/<UUID>.

The <UUID> in both cases stands for the MD5 sum of your license key file (unless you have a personal UUID received from **Doctor Web Technical Support**).

Example:

```
<drwebvirustop period="24" top="2"
user="<UUID>"
  lastdata="2005-04-12 07:00:00+04">
 <item>
  <caught>69</caught>
  <percents>24.1258741258741</percents>
  <place>1</place>
  <vname>Win32.HLLM.Netsky.35328</vname>
 </item>
 <item>
  <caught>57</caught>
  <percents>19.9300699300699</percents>
  <place>2</place>
  <vname>Win32.HLLM.MyDoom.54464</vname>
 </item>
</drwebvirustop>
```

In this file the following XML attributes are used:

- `period` – duration (in hours) of the statistics collection process;
- `top` – number of the most frequently detected threats in the statistics table (number of rows);
- `user` – user identifier;
- `lastdata` – last time user sent the data to the server;
- `vname` – threat name;
- `place` – threat place in the statistics;
- `caught` – a number of the detections of the certain threat;
- `percents` – percentage of the detections.

The value of the period parameter and the sample size cannot be changed by user.

Dr.Web Monitor

Dr.Web Monitor component is presented by a memory resident module **drweb-monitor**.

It is used to increase fault-tolerance of the whole **Dr.Web for Unix Internet gateways** suite. It ensures correct startup and termination of operation of software modules and their components as well as restart of any component due to its abnormal operation. **Dr.Web Monitor** starts all modules and loads, if necessary, some extra components of these modules. If **Dr.Web Monitor** fails to start a module, it repeats an attempt later. Number of attempts and a time period between them are defined by **Dr.Web Monitor** settings.

After all modules are loaded, **Dr.Web Monitor** permanently controls their operation. If any module or one of its components operates abnormally, **Dr.Web Monitor** restarts the stalled application. Maximum number of attempts to restart a component and a period of time between them are defined by **Dr.Web Monitor** settings. If any of the modules starts to operate abnormally, **Dr.Web Monitor** notifies the system administrator.

Dr.Web Monitor can interact with **Dr.Web Agent** by exchanging control signals.

Operation Mode

If necessary, **Doctor Web** solutions can be used to connect to corporate or private **Anti-virus networks** managed by **Dr.Web Enterprise Security Suite**. To operate in such central protection mode, you do not need to install additional software or uninstall your **Dr.Web** solution.

To provide you with this option, **Dr.Web Monitor** can operate in one of the two following modes:

- **Standalone mode** when a protected computer is not included in an anti-virus network or managed remotely. In this

mode, configuration files and key files reside on local drives, **Dr.Web Monitor** is controlled in full from the protected computer, and modules start as set in **Dr.Web Monitor** configuration file.

- **Enterprise mode** (or **central protection mode**) when protection of local computer is managed from a central protection server. In this mode, some features and settings of **Dr.Web for Unix Internet gateways** may be modified and blocked for compliance with a general (e.g., company) security policy. A key file for operation in this mode is received from the central protection server. Your personal key file on the local computer is not used.

To use central protection mode

1. Contact anti-virus network administrator of your company for a public key file and parameters of connection to the central protection server.
2. In **Dr.Web Monitor** configuration file (by default, `%etc_dir/monitor.conf`), set the **`UseEnterpriseMode`** parameter to `Yes`.

   In the central protection mode, some features and settings of **Dr.Web for Unix Internet gateways** may be modified and blocked for compliance with the general security policy. A key file for operation in this mode is received from central protection server. Your personal key file on a local computer is not used.

For **Dr.Web for Unix Internet gateways** to fully support central protection mode, you must also set **Dr.Web Agent** to operate in enterprise mode. For more details, see Operation Mode for **Dr.Web Agent**.

To use standalone mode

1. Make sure that all necessary modules that you want **Dr.Web Monitor** to start are listed in the **`RunAppList`** parameter under the `[Monitor]` section of **Dr.Web Monitor** configuration file (by default, `%etc_dir/monitor.conf`).

2. In the `[Monitor]` section of **Dr.Web Monitor** configuration file, set the **`UseEnterpriseMode`** parameter to `No`.

   On switching to this mode, all settings of **Dr.Web for Unix Internet gateways** are unlocked and restored to their previous or default values. You can once again access all features of **Dr.Web for Unix Internet gateways** solution and configure them in full.

For correct operation in standalone mode, **Dr.Web for Unix Internet gateways** requires a valid personal key file. The key files received from central protection server cannot be used in this mode.

Command Line Parameters

To run **Dr.Web Monitor**, use the following command:

```
drweb-monitor [parameters]
```

where the following `parameters` are allowed:

Short case	Extended case	Arguments
`-h`	`--help`	
Description: Show information about supported command line parameters on the screen and terminate module		
`-v`	`--version`	
Description: Show **Dr.Web Monitor** version on the screen and terminate module		
`-u`	`--update`	
Description: Start updating all components of **Dr.Web for Unix Internet gateways**		

Short case	Extended case	Arguments
-C	--check-only	
Description: Check correctness of **Dr.Web Monitor** configuration. This parameter can't be used if in the system already exist started copy of **Dr.Web Monitor** process		
-A	--check-all	<path to file>
Description: Check correctness of configurations of all components of **Dr.Web for Unix Internet gateways**		
-c	--conf	<path to file>
Description: Module must use the specified configuration file		
-r	--run	<application name>[, <application name>,...]
Description: Run applications, name of which are specified. As an application name must be used string <application name> from Application "<application name>" section header in mmc file (about this see in chapter Interaction with other Software Modules). This parameter can't be used if in the system already exist started copy of **Dr.Web Monitor** process.		

Usage example:

```
drweb-monitor -r AGENT
```

Configuration File

Setup of **Dr.Web Monitor** is performed using its configuration file %etc_dir/monitor.conf.

General principles of the **Dr.Web for Unix Internet gateways** configuration files organization see in chapter Configuration files.

[Logging] Section

In [**Logging**] section parameters responsible for logging information about operation of **Dr.Web Monitor** are collected:

[Logging]

Level = {log level}	**Dr.Web Monitor** log verbosity level. Following levels are allowed: • Quiet • Error • Alert • Info • Debug Default value: **Level** = Info
IPCLevel = {log level}	Log verbosity level of IPC library. Following levels are allowed: • Quiet • Error • Alert • Info • Debug Default value: **IPCLevel** = Error
SyslogFacility = {syslog label}	Log type label which is used by syslogd system service. Default value: **SyslogFacility** = Daemon
FileName = {syslog | path to file}	Path to log file name. You can specify syslog as log file name

	and logging will be carried out by `syslogd` system service. In this case you must also specify **`SyslogFacility`** parameter. Default value: **`FileName`** = `syslog`

[Monitor] Section

[`Monitor`] section contains all **Dr.Web Monitor** main settings:

[`Monitor`]

`RunForeground` = `{logical}`	**Yes** value forces **Dr.Web Monitor** not to use `daemon` mode. It helps to control its state using special utilities (i.e., **`daemontools`**). Default value: **`RunForeground`** = `No`
`User` = `{text value}`	User name used to run **Dr.Web Monitor** with certain user privileges. Default value: **`User`** = `drweb`
`Group` = `{text value}`	User group name used to run **Dr.Web Monitor** with certain user privileges. Default value: **`Group`** = `drweb`

PidFileDir = {path to directory}	Path to directory where PID-file of **drweb-monitor** is stored when **Dr.Web Monitor** is started. Default value: **PidFileDir** = %var_dir/run/
ChDir = {path to directory}	Change of working directory when **Dr.Web Monitor** is started. If this parameter is set up, **Dr.Web Monitor** changes directory to the one specified in this parameter value. Otherwise working directory is not changed. Default value: **ChDir** = /
MetaConfigDir = {path to directory}	Path to directory where meta-configuration files reside. These files contain settings defining **Dr.Web Monitor** interaction with other modules of **Dr.Web** suite. Meta-configuration files are supplied by **Dr.Web Dr.Web** developers and don't need editing. Default value: **MetaConfigDir** = %etc_dir/monitor/
Address = {address}	Socket used by **Dr.Web Monitor** to receive control signals from other components of **Dr.Web** suite. Default value: **Address** = local:%var_dir/ipc/.monitor
Timeout = {numerical value}	Maximum time in seconds to establish connection between **Dr.Web Monitor** and other components of **Dr.Web** suite.

	Default value: **Timeout** = 5
TmpFileFmt = {text value}	Template of names of **Dr.Web Monitor** temporary files. Template layout: path_to_file.XXXXXX where X – random symbol (letter or digit), used in temporary file names. Default value: **TmpFileFmt** = %var_dir/msgs/tmp/monitor.XXXXXX
RunAppList = {text value}	List of modules started by **Dr.Web Monitor**, with comma used as a delimiter. Please note that this parameter will not be modified after uninstalling **Dr.Web** modules. You must manually remove uninstalled modules from this parameter. Otherwise **Dr.Web Monitor** will no be able to run and to execute other **Dr.Web** modules. Default value: **RunAppList** = AGENT
UseEnterpriseMode = {logical}	Yes value makes **Dr.Web Monitor** receive the list of modules to be started from **Dr.Web Agent**, not from **RunAppList** parameter value. Default value: **UseEnterpriseMode** = No
RecoveryTimeList = {numerical values}	Time intervals between attempts to restart not responding modules (in seconds). This parameter can have multiple values, delimited by commas. First attempt to restart a module is made after a period of time specified in first parameter value, second attempt – using second parameter

	value, and so on. Default value: **RecoveryTimeList** = 0,30,60
InjectCmd = {string}	Command to send reports. Please note that if you want to send reports to some other address (not only to root@localhost), you should specify it in the command. Default value: **InjectCmd** = "/usr/sbin/sendmail -t"
AgentAddress = {address}	Socket used by **Dr.Web Monitor** to interact with **Dr.Web Agent** (parameter value must be the same as **Address** parameter value from **Dr.Web Agent** configuration file). Default value: **AgentAddress** = local:%var_dir/ipc/.agent
AgentResponseTime = {numerical value}	Maximum time to get a response from drweb-agent module in seconds. If **Dr.Web Agent** doesn't respond during this period of time, **Dr.Web Monitor** considers drweb-agent not working and tries to restart it. If 0 is specified, response time is unlimited. Default value: **AgentResponseTime** = 5

Running Dr.Web Monitor

When **Dr.Web Monitor** is ran with default settings the following actions are performed:

1. **Dr.Web Monitor** searches for and loads its configuration file. If configuration file is not found, loading stops;
2. Then it enters `daemon` mode, so all information about loading problems cannot be output to console anymore and is written to log file;
3. Socket for **Dr.Web Monitor** interaction with other software modules is created. If TCP socket is used, there can be several connections (loading continues if at least one connection is established). If UNIX socket is used, it can be created only if the user whose privileges are used to run **drweb-monitor** has read and write access to the certain directory. If socket cannot be created, loading stops;
4. PID-file with **drweb-monitor** PID information is created. If PID-file cannot be created, loading stops;
5. **drweb-monitor** module starts other software modules. If some module cannot load, **Dr.Web Monitor** tries to restart it. If all **Dr.Web Monitor** attempts to start the module are unsuccessful, **Dr.Web Monitor** unloads all previously loaded modules and terminates. All problems with the startup of modules **Dr.Web Monitor** reports using one of available methods (output to log file, notification via e-mail, startup of specific program). Notification methods used for various modules are set in **Dr.Web Monitor** meta-configuration file.

For successful startup of **Dr.Web Monitor** in automatic mode:

- value of `ENABLE` variable must be changed to `1` in the **drweb-monitor** `enable` file (for **Linux** and **Solaris**);
- or a `drweb_monitor_enable="YES"` line must be added to the `/etc/rc.conf` file (for **FreeBSD**).

Please note that if you select "Configure Services" option in the conversation with the post-install script, all services including **Dr.Web Agent** will be started automatically.

Placement of the enable files is depends from **Dr.Web for Unix Internet gateways** installation type:

- Installation from **universal package for UNIX systems**:

  Files will be placed to directory `%etc_dir` and will be named
  `drweb-icapd.enable`,
  `drwebd.enable`,
  `drweb-monitor.enable`.

- Installation from **native DEB packages**:

  Files will be placed to directory `/etc/defaults` and will be named
  `drweb-icapd`,
  `drwebd`,
  `drweb-monitor`.

- Installation from **native RPM packages**:

  Files will be placed to directory `/etc/sysconfig` and will be named
  `drweb-icapd.enable`,
  `drwebd.enable`,
  `drweb-monitor.enable`.

Interaction with other Software Modules

Interaction with other software modules is performed via *Monitor configuration files* (`mmc`-files). These files are included in packages of those products which can interact with **Dr.Web Monitor**. In these files components' contents, location of binaries, their starting sequence and parameters of startup are described.

Description of each component can be found in `Application` section named after this component. At the end of the section `EndApplication` must be specified.

The following parameters must be present in the description of the component:

- **FullName** – full name of the component.
- **Path** – path to binary files.
- **Depends** – names of components which must be started before the described component is started. For example, AGENT component must be started before **Dr.Web Daemon** component, therefore in mmc-file for **Dr.Web Daemon** **Depends** parameter has AGENT value. If there are no dependencies, this parameter can be skipped.
- **Components** – list of binary files of modules started when component itself is started. Modules are started in order they are specified in this parameter. For each module command line parameters (may be enclosed in quotation marks), timeouts for startup and close down, notification type and startup privileges. *Notification type* – defines where to send notifications about component's failure. When MAIL value is specified, notifications are sent by mail, when LOG value is specified, information is output to log only. *Startup privileges* – define with privileges of which group and user, the component will be started.

Example of mmc-file for Dr.Web Daemon:

```
Application "DAEMON"
    FullName    "Dr.Web (R) Daemon"
    Path        "/opt/drweb/"
    Depends     "AGENT"
    Components
          # name     args     MaxStartTime
 MaxStopTime     NotifyType  User:Group
          drwebd   "-a=local:/var/drweb/ipc/.
agent --foreground=yes"   30  10  MAIL  drweb:
drweb
    EndComponents
EndApplication
```

Command Line Scanner Dr.Web

Command line scanner **Dr.Web Scanner** serves for detection and neutralization of malware on the local machine. Component is presented by a module **drweb**.

Dr.Web Scanner at start checks the specified files and boot records of the specified disks. For anti-virus checking and curing **Dr.Web Scanner** uses the **Dr.Web Engine** and virus bases, but doesn't use the resident module **Dr.Web Daemon** (work is made independent of it).

Command Line Parameters

You can run **Dr.Web Scanner** with the following command:

```
$ %bin_dir/drweb <path> [parameters]
```

where `<path>` – is the path or paths to scanned directories or the mask for checked files. If in startup path is specified with following prefix: `disk://<path to device file>` then boot sector of appropriate device will be checked and cured, if necessary. When **Dr.Web Scanner** is started only with `<path>` argument without any parameters specified, it scans the specified directory using the default set of parameters. Details about `<path>` parameter specification you can see below.

In the following example user home directory is being checked:

```
$ %bin_dir/drweb ~
```

When scanning is finished **Dr.Web Scanner** displays all found infected and suspicious files in the following manner:

```
/path/file infected [virus] VIRUS_NAME
```

After presenting information about infected or suspicious files, **Dr. Web Scanner** outputs summary report in the following manner:

```
Report for "/opt/drweb/tmp":
Scanned         : 34/32     Cured       : 0
Infected        : 5/5       Removed     : 0
Modifications   : 0/0       Renamed     : 0
Suspicious      : 0/0       Moved       : 0
Scan time       : 00:00:02 Scan speed : 5233
KB/s
```

Numbers divided by slash "/" mean: the first one – total number of files, the second one – number of files in archives.

You can use `readme.eicar` file included in the distribution package to test **Dr.Web Scanner**. Open this file in your text editor of choice and follow the instructions contained in the file to transform it into `eicar.com` program.

When you check it with **Dr.Web Scanner**, it should output the following message:

```
%bin_dir/doc/eicar.com infected by Eicar Test File
(Not a Virus!)
```

This program is not a virus and is used only for testing of anti-virus programs.

Dr.Web Scanner has many command-line parameters. In accordance to UNIX conventions they are separated from path by whitespace character and start with a hyphen("-"). To get complete list of parameters run **Dr.Web Scanner** with either `-?`, `-h`, or `-help` parameters.

The **Console Scanner** parameters can be divided into the following groups:

- Scan area parameters
- Diagnostics parameters
- Action parameters
- Interface parameters

Scan Area Parameters

These parameters determine where to perform a virus scan:

Parameter	Description
`-path [=] <path>`	Sets the scan path. Symbol '=' can be skipped, in this case path for scan is delimited from `-path` parameter by a white space. You can specify several paths in one `-path` parameter (paths will aggregate to one list). Also you can specify paths without `-path` parameter. If `<path>` is specified with following prefix in startup options: `disk://<path to device file>`, then boot sector (MBR) of appropriate device will be checked and cured, if necessary. Device file is a special file, placed in directory `/dev` and having name like as **`sdX`** or **`hdX`**, where **`X`** – letter of latin alphabet (`a`, `b`, `c`, ...). For example: **`hda`**, **`sda`**. So, if you want to check MBR of disk **`sda`**, specify: `disk:///dev/sda`
`-@[+]<file>`	Instructs to scan objects listed in the specified file. Add a plus '+' if you do not want the list-file to be deleted when scanning completes. List file may contain paths to directories that must be scanned regularly, or list of files to be checked only once.
`--`	Instructs to read list of objects to scan from the standard input (STDIN).
`-sd`	Sets recursive search for files to scan in subfolders.
`-fl`	Instructs to follow symbolic links to both files and folders. Links causing loops are ignored.
`-mask`	Instructs to ignore masks for filenames.

Diagnostics Parameters

These parameters determine which types of objects to scan for viruses:

Parameter	Description
-al	Instructs to scan all objects defined by scan paths regardless of their file extension and structure. This parameter is opposite in effect to the **-ex** parameter.
-ex	Instructs to search scan paths for threats presented by files of certain types and ignore objects of other types. The list of file types should be specified in the **FileTypes** variable of the configuration file. The configuration file is defined by the **-ini** parameter. By default, objects with the following file extensions are scanned: EXE, COM, DLL, SYS, VXD, OV?, BAT, BIN, DRV, PRG, BOO, SCR, CMD, 386, FON, DO?, XL?, WIZ, RTF, CL*, HT*, VB*, JS*, INF, PP?, OBJ, LIB, PIF, HLP, MD?, INI, MBR, IMG, CSC, CPL, MBP, SH, SHB, SHS, SHT*, CHM, REG, XML, PRC, ASP, LSP, MSO, OBD, THE*, NWS, SWF, MPP, OCX, VS*, DVB, CPY, BMP, RPM, ISO, DEB, AR?, ZIP, R??, GZ, Z, TGZ, TAR, TAZ, CAB, LHA, LZH, BZ2, MSG, EML, 7Z, CPIO. This parameter is opposite in effect to the **-al** parameter.
-ar[d|m|r][n]	Instructs to scan contents of archives (ARJ, CAB, GZIP, RAR, TAR, ZIP, etc.), both simple (*.tar) and compressed (*.tar.bz2, *.tbz). If you do not supplement the parameter with an additional **d**, **m** or **r** modifier, **Dr.Web Scanner** only informs you about detected malicious or suspicious files in archives. Otherwise, it applies appropriate actions to avert detected threats.
-cn[d|m|r][n]	Instructs to scan contents of files containers (HTML, RTF, PowerPoint). If you do not supplement the parameter with an additional **d**, **m** or **r** modifier, **Dr.Web Scanner** only informs you about detected malicious or suspicious

Parameter	Description
	files in containers. Otherwise, it applies appropriate actions to avert detected threats.
-ml[d|m|r][n]	Instructs to scan contents of mail files. If you do not supplement the parameter with an additional **d**, **m** or **r** modifier, **Dr.Web Scanner** only informs you about detected malicious or suspicious elements of mail files. Otherwise, it applies appropriate actions to avert detected threats.
-upn	Scan executable files packed with LZEXE, DIET, PKLITE, EXEPACK with compression type output disabled
-ha	Enables heuristic analyser that help detect possible unknown threats.

For some parameters, you can use the following additional modifiers:

- Add **d** to delete objects to avert the threat
- Add **m** to move objects to **Quarantine** to avert the threat
- Add **r** to rename objects to avert the threat (that is, replace the first character of the file's extension with '#')
- Add **n** to disable output of the archive, container, mail file or packer type

If malicious objects are detected within complex objects such as archives, containers, packed or mail files, then the reaction is applied to the complex object as a whole, and not to the included malicious object only.

Action Parameters

These parameters determine which actions to apply to infected (or suspicious) objects:

Parameter	Description
-cu[d|m|r]	Defines an action to apply to infected files and boot sectors. If you do not supplement the parameter with an additional modifier, **Dr.Web Scanner** cures infected objects and deletes incurable files (if another action

Parameter	Description
	is not specified in the **-ic** parameter). Otherwise, it applies appropriate action to infected curable object, and processes incurable files as specified in the **-ic** parameter.
-ic[d|m|r]	Defines an action to apply to incurable files. If you do not supplement the parameter with an additional modifier, **Dr.Web Scanner** only informs you about the threat.
-sp[d|m|r]	Defines an action to apply to suspicious files. If you do not supplement the parameter with an additional modifier, **Dr.Web Scanner** only informs you about the threat.
-adw[d|m|r|i]	Defines an action to apply to adware. If you do not supplement the parameter with an additional modifier, **Dr.Web Scanner** only informs you about the threat.
-dls[d|m|r|i]	Defines an action to apply to dialers. If you do not supplement the parameter with an additional modifier, **Dr.Web Scanner** only informs you about the threat.
-jok[d|m|r|i]	Defines an action to apply to joke programs. If you do not supplement the parameter with an additional modifier, **Dr.Web Scanner** only informs you about the threat.
-rsk[d|m|r|i]	Defines an action to apply to potentially dangerous programs. If you do not supplement the parameter with an additional modifier, **Dr.Web Scanner** only informs you about the threat.
-hck[d|m|r|i]	Defines an action to apply to hacktools. If you do not supplement the parameter with an additional modifier, **Dr.Web Scanner** only informs you about the threat.

Additional modifiers indicate actions that should be applied for averting threats:

- Add **d** to delete objects.
- Add **m** to move objects to **Quarantine**.
- Add **r** to rename objects, that is, replace the first character of extension with '#'.
- Add **i** to ignore threats (available for minor threats only such as adware etc), that is, apply no action and do not list such threats in the report.

If malicious objects are detected within complex objects such as archives, containers, packed or mail files, then the reaction is applied to the complex object as a whole, and not to the included malicious object only.

Interface Parameters

These parameters configure **Dr.Web Scanner** output:

Parameter	Description
`-v, -version, --version`	Instructs to output information about the product and scan engine versions and exit **Dr.Web Scanner**.
`-ki`	Instructs to output information about the license and its owner (in UTF8 encoding only).
`-go`	Instructs to run **Dr.Web Scanner** in batch mode when all questions implying answers from a user are skipped and all decisions implying a choice are taken automatically. This mode is useful for automatic scanning of files, for example, during a daily (or weekly) check of the hard drive.
`-ot`	Instructs to use the standard output (STDOUT).
`-oq`	Disables information output.
`-ok`	Instructs to list all scanned objects in the report and mark "clean" object with **Ok**.

Parameter	Description
-log=[+]<path to file>	Instructs to log **Dr.Web Scanner** operations in the specified file. The file name is mandatory to turn on logging. Add a plus '+' if you want to append the log file instead of overwriting it.
-ini=<path to file>	Instructs to use the specified configuration file. No configuration file is supplied with **Dr.Web Scanner** by default.
-lng=<path to file>	Instructs to use the specified language file. The default language is English.
-a = <Control Agent address>	Run **Dr.Web Scanner** in central protection mode.
-ni	Disables the use of the configuration file for setting up scanning options. **Dr.Web Scanner** is configured with parameters from the command line only.
-ns	Disables interruption of scanning process including the use of interruption signals (SIGINT).
--only-key	Nothing but key file is received from the Control Agent at start.

You can use hyphen «-» postfix to disable the following parameters:

-ar -cu -ha -ic -fl -ml -ok -sd -sp

For example, if you start **Dr.Web Scanner** with the following command:

```
$ drweb <path> -ha-
```

heuristic analysis (enabled by default) will be disabled.

For the `-cu`, `-ic` and `-sp` parameters, the negative form disables any action specified with additional modifiers, that is, negative form of these parameters instruct to report on detection of infected or suspicious objects, but take no actions to avert threats.

The `-al` and `-ex` parameters have no negative for, but cancel one another.

By default (if **Dr.Web Scanner** configuration was not customized and no parameters were specified) **Dr.Web Scanner** starts with the following parameters:

```
-ar -ha -fl- -ml -sd -al -ok
```

Default **Dr.Web Scanner** parameters (including scan of archives, packed files and mailboxes, recursive search, heuristic analysis, etc.) is sufficient for everyday diagnostics and can be used in typical cases. You can also use hyphen «-» postfix to disable some parameters.

Disabling scan of archives and packed files will significantly decrease antivirus protection level, because in archives (especially, self-extracting) enclosed in e-mail attachments viruses are distributed. Office documents potentially susceptible to infection with macro viruses (Word, Excel) are also dispatched via e-mail in archives and containers.

When you run **Dr.Web Scanner** with default parameters, no cure actions and no actions for incurable and suspicious files are taken. For these actions to be performed, you must specify corresponding command line parameters explicitly.

Configuration File

Dr.Web Scanner can be used with default settings, but it could be convenient to configure it according to your specific requirements. **Dr.Web Scanner** settings are stored in configuration file (`drweb32.ini` by default) which is located in `%etc_dir` directory.

To use another configuration file, specify full path to it with command line parameter, for example:

```
$ %bin_dir/drweb -ini=%bin_dir/etc/drweb.ini
```

General principles of the **Dr.Web for Unix Internet gateways** configuration files organization see in chapter Configuration files.

[Scanner]

EnginePath = {path to file}	Location of drweb32.dll module (anti-virus engine **Dr.Web Engine**). This parameter is also used by **Dr.Web Updater**. Default value: **EnginePath** = %bin_dir/lib/drweb32.dll
VirusBase = {list of file masks}	Masks for loading virus databases. This parameter is also used by **Dr.Web Updater**. Multiple values are allowed (separated by commas). By default, virus databases files has a .vdb extension Default value: **VirusBase** = %var_dir/bases/*.vdb
UpdatePath = {path to directory}	This parameter is used by **Dr.Web Updater** (update.pl) and is mandatory. Default value: **UpdatePath** = %var_dir/updates/
TempPath = {path to directory}	Directory where anti-virus engine **Dr.Web Engine** puts temporary files. It is used when system has insufficient

	memory or to unpack certain types of archives. Default value: **TempPath** = /tmp/
LngFileName = {path to file}	Language file location. By default, language files has a .dwl extension Default value: **LngFileName** = %bin_dir/lib/ru_scanner.dwl
Key = {path to file}	Key file location (license or demo). By default, key files has a .key extension Default value: **Key** = %bin_dir/drweb32.key
OutputMode = {Terminal | Quiet}	Output mode: • Terminal – console output • Quiet – no output Default value: **OutputMode** = Terminal
HeuristicAnalysis = {logical}	Enable or disable heuristic detection of unknown viruses. Heuristic analysis can detect previously unknown viruses which are not included in the virus database. It relies on advanced algorithms to determine if scanned file structure is similar to the virus architecture. Because of that heuristic analysis can produce false positives: all objects detected by this method are considered suspicious. Please send all suspicious files to **Dr.Web** through http://vms.drweb.com/sendvirus/ for checking. To send suspicious file, put it in password protected archive, include

	password in message body and attach **Dr.Web Scanner** report. Default value: **HeuristicAnalysis** = Yes
ScanPriority = {signed numerical value}	**Dr.Web Scanner** process priority. Value must be between -20 (highest priority) and 19 (**Linux**) or 20 (other UNIX-like operating systems) range. Default value: **ScanPriority** = 0
FilesTypes = {list of file extensions}	File types to be checked "by type", i.e. when **ScanFiles** parameter (explained below) has ByType value. "*" and "?" wildcard characters are allowed. Default value: FilesTypes = EXE, COM, SYS, OV?, BAT, BIN, DRV, PRG, BOO, SCR, CMD, VXD, 386, DLL, FON, DO?, XL?, WIZ, RTF, CL*, HT*, VB*, JS*, INF, AR?, ZIP, R??, PP?, OBJ, LIB, HLP, MD?, INI, MBR, IMG, CSC, CPL, MBP, SHS, SHB, PIF, SO, CHM, REG, XML, PRC, ASP, LSP, MSO, OBD, THE*, NWS, SWF, BMP, MPP, OCX, DVB, CPY, MSG, EML
FilesTypesWarnings = {logical}	Notify about files of unknown types. Default value: **FilesTypesWarnings** = Yes
ScanFiles = {All | ByType}	Scan all files (All) or only files with extensions specified in **FileType** parameter (ByType). Value ByType of this parameter can be

	used only in **local scan** mode (in other modes always used only `All` value). In mailboxes are always scanned all files (independent of **`ScanFiles`** parameter value). Default value: **`ScanFiles`** = `All`
`ScanSubDirectories` = `{logical}`	Enable/disable scanning in subdirectories. Default value: **`ScanSubDirectories`** = `Yes`
`CheckArchives` = `{logical}`	Enables or disables checking of files in archives (RAR, ARJ, TAR, GZIP, CAB and others). Default value: **`CheckArchives`** = `Yes`
`CheckEMailFiles` = `{logical}`	Enables or disables checking mailbox files. Default value: **`CheckEMailFiles`** = `Yes`
`ExcludePaths` = `{list of path | file masks}`	Masks for files to be skipped during scanning. Multiple values are allowed (separated by commas). Default value: **`ExcludePaths`** = `/proc,/sys,/dev`
`FollowLinks` = `{logical}`	Determine if **Dr.Web Scanner** will follow symbolic links during scanning. Default value: **`FollowLinks`** = `No`

RenameFilesTo = {mask}	Mask for renaming infected or suspicious files if action Rename is specified. Default value: **RenameFilesTo** = #??
MoveFilesTo = {path to directory}	Path to the **Quarantine** directory. Default value: **MoveFilesTo** = %var_dir/infected/
EnableDeleteArchiveAction ={logical}	Enables or disables action Delete for multipart objects (archives, mailboxes, HTML pages) if they contain infected files. Please note: with this parameter enabled whole multipart object will be deleted (archive, mailbox, etc.), not just infected file or message. Use this option carefully! Default value: **EnableDeleteArchiveAction** = No
InfectedFiles = {action}	Sets action when infected file is found: Report, Cure, Delete, Move, Rename, Ignore. Delete, Move and Rename actions, specified for archives, containers and mailboxes containing infected files, are applied to the whole archive, container or mailbox! Default value: **InfectedFiles** = Report
SuspiciousFiles = {action}	Sets action when suspicious file is found: Report, Delete, Move, Rename, Ignore.

	Default value: **SuspiciousFiles** = Report
IncurableFiles = {action}	Sets action when infected file cannot be cured (should be used only if **InfectedFiles** = Cure): Report, Delete, Move, Rename, Ignore. Default value: **IncurableFiles** = Report
ActionAdware = {action}	Sets action when adware is found: Report, Delete, Move, Rename, Ignore. Default value: **ActionAdware** = Report
ActionDialers = {action}	Sets action when dialer is found: Report, Delete, Move, Rename, Ignore. Default value: **ActionDialers** = Report
ActionJokes = {action}	Sets action when joke program is found: Report, Delete, Move, Rename, Ignore. Default value: **ActionJokes** = Report
ActionRiskware = {action}	Sets action when potentially dangerous program is found: Report, Delete, Move, Rename, Ignore. Default value: **ActionRiskware** = Report

ActionHacktools = {action}	Sets action when hacking program is found: Report, Delete, Move, Rename, Ignore. Default value: **ActionHacktools** = Report
ActionInfectedMail = {action}	Sets action when infected file is found in mailbox: Report, Delete, Move, Rename, Ignore. Default value: **ActionInfectedMail** = Report
ActionInfectedArchive = {action}	Sets action when infected file is found in archive: Report, Delete, Move, Rename, Ignore. Default value: **ActionInfectedArchive** = Report
ActionInfectedContainer = {action}	Sets action when infected file is found in container (OLE, HTML, PowerPoint and etc.): Report, Delete, Move, Rename, Ignore. Default value: **ActionInfectedContainer** = Report

Logging parameters:

LogFileName = {syslog | file name}	Log file name. You can specify syslog as log file name and logging will be carried out by syslogd system service. In this case you must also specify

	SyslogFacility and **SyslogPriority** parameters. Default value: **LogFileName** = syslog
SyslogFacility = {syslog label}	Log type label which is used by syslogd system service. Default value: **SyslogFacility** = Daemon
SyslogPriority = {log level}	Logging priority (log verbosity level) when syslogd system service is used. Following levels are allowed: • Error • Alert • Warning • Info • Notice Default value: **SyslogPriority** = Info
LimitLog = {logical}	Enables or disables limit for log file size (if **LogFileName** value is not specified to syslog). With this parameter enabled, **Dr.Web Scanner** will be checking log file size at startup. If log file size exceeds **MaxLogSize** parameter value, log file content will be erased and logging will start from scratch. Default value: **LimitLog** = No
MaxLogSize = {numerical value}	Maximum log file size in Kbytes. Used only with **LimitLog** = Yes.

	Set this parameter value to `0` if you do not want log file to be unexpectedly modified at start up. Default value: **`MaxLogSize`** = 512
`LogScanned` = {logical}	Enables or disables logging of information about all scanned objects regardless whether they are infected or not. Default value: **`LogScanned`** = Yes
`LogPacked` = {logical}	Enable/disable logging of additional information about files packed with DIET, PKLITE and other utilities. Default value: **`LogPacked`** = Yes
`LogArchived` = {logical}	Enables or disables logging of additional information about files archived with various archiving utilities. Default value: **`LogArchived`** = Yes
`LogTime` = {logical}	Enables or disables logging of time for each record. Parameter is not used if **`LogFileName`** = syslog. Default value: **`LogTime`** = Yes
`LogStatistics` = {logical}	Enable/disable logging of scan statistics. Default value: **`LogStatistics`** = Yes
`RecodeNonprintable` = {logical}	Non-printable characters output mode for a given terminal.

	Default value: **RecodeNonprintable** = Yes
RecodeMode = {Replace | QuotedPrintable}	Decoding mode for non printable characters if **RecodeNonprintable** = Yes. When **RecodeMode** = Replace all non-printable characters are substituted with **RecodeChar** parameter value (see below). When **RecodeMode** = QuotedPrintable all non printable characters are converted to quoted printable encoding. Default value: **RecodeMode** = QuotedPrintable
RecodeChar = {"?" | "_" | ...}	Sets character for replacing non-printable characters if **RecodeMode** = Replace. Default value: **RecodeChar** = "?"

Following parameters can be used to reduce scanning time in archive files (some objects in archives will not be checked).

MaxCompressionRatio = {numerical value}	Maximum compression ratio, i.e. ratio of unpacked file size to packed file size. If the ratio exceeds specified value, file will not be extracted and therefore will not be checked. Parameter can take only natural values. E-mail message with such file is considered "mail bomb". If value 0 is specified, compression ratio will not be checked Default value: **MaxCompressionRatio** = 5000

CompressionCheckThreshold = {numerical value}	Minimum size of file inside archive in Kbytes, for which compression ratio check will be performed (if it is specified by **MaxCompressionRatio** parameter). Default value: **CompressionCheckThreshold** = 1024
MaxFileSizeToExtract = {numerical value}	Maximum unpacked size for file in archive in Kbytes. If unpacked size exceed specified value it will not be scanned. E-mail letter with such file is considered "mail bomb". Default value: **MaxFileSizeToExtract** = 500000
MaxArchiveLevel = {numerical value}	Maximum allowed archive nesting level. If archive nesting level exceeds specified value, it will not be scanned. E-mail message with such file is considered "mail bomb". If value 0 is specified, depth of nesting level will not be checked Default value: **MaxArchiveLevel** = 8
MaximumMemoryAllocationSize = {numerical value}	Size of maximum amount of memory consumption allowed for scanning one file (in Mbytes). If value is set to 0, memory allocation will not be limited. Default value: **MaximumMemoryAllocationSize** = 0

ScannerScanTimeout = {numerical value}	Maximum time period allowed for scanning one file (in seconds). If value is set to 0, scanning time will not be limited. Default value: **ScannerScanTimeout** = 0
MaxBasesObsolescencePeriod = {numerical value}	Maximal period after last update during which virus databases are considered up-to-date (in hours). When this period is over, notification that databases are obsolete will be output to console. If value is set to 0, database obsolescence will not be checked. Default value: **MaxBasesObsolescencePeriod** = 24
ControlAgent = {address}	**Dr.Web Agent** socket address. **Example**: **ControlAgent** = inet:4040@127.0.0.1,local:%var_dir/ipc/.agent **Dr.Web Scanner** receives from the **Dr.Web Agent** license key file (and configuration information in case **OnlyKey** = No. Also in this case socket is used for sending **Dr.Web Scanner**'s work statistics to **Dr.Web Agent**). Default value: **ControlAgent** = local:%var_dir/ipc/.agent
OnlyKey = {logical}	Enable receiving only license key file from **Dr.Web Agent** without configuration information. **Dr.Web Scanner** will use local

	configuration file. If this parameter value is set to `No`, and the address of a **Dr.Web Agent** socket is specified, **Dr.Web Scanner** will also be sending to **Dr.Web Agent** statistics on scanned files (sending of information will be carried out after scanning of each file). Default value: **`OnlyKey`** = `No`

Running Dr.Web Scanner

You can run **Dr.Web Scanner** with command

```
$ %bin_dir/drweb
```

If `%bin_dir` directory is added to `PATH` environment variable, you can run **Dr.Web Scanner** from any directory only by typing "`drweb`". However, doing so (as well as making a symbolic link to **Dr.Web Scanner** executable file in directories like `/bin/`, `/usr/bin/`, etc.) is not recommended for security reasons.

Dr.Web Scanner can be run with either root or user privileges. In the last case virus scanning can be only performed in directories, where user has read access, and infected files will be cured only in directories, where user has write access (usually it is user home directory, `$HOME`). Also, there are other restrictions when **Dr.Web Scanner** is started with user privileges, for example, on moving and renaming infected files.

When **Dr.Web Scanner** is started, it displays program name, platform name, program version number, release date and contact information. It also shows user registration information and statistics, list of virus databases and installed updates:

```
Dr.Web (R) Scanner for Linux, v6.0.1 (February 19,
2010)
Copyright (c) Igor Daniloff, 1992-2010
Support service: http://support.drweb.com/
To purchase: http://buy.drweb.com/
Program version: 6.0.0.10060 <API:2.2>
Engine version: 6.0.0.9170 <API:2.2>
Loading /var/drweb/bases/drwtoday.vdb - Ok, virus
records: 1533
Loading /var/drweb/bases/drw60012.vdb - Ok, virus
records: 3511
-------------------------------------------
Loading /var/drweb/bases/drw60000.vdb - Ok, virus
records: 1194
Loading /var/drweb/bases/dwn60001.vdb - Ok, virus
records: 840
Loading /var/drweb/bases/drwebase.vdb - Ok, virus
records: 78674
Loading /var/drweb/bases/drwrisky.vdb - Ok, virus
records: 1271
Loading /var/drweb/bases/drwnasty.vdb - Ok, virus
records: 4867
Total virus records: 538681
Key file: /opt/drweb/drweb32.key
Key file number: XXXXXXXXXX
Key file activation date: XXXX-XX-XX
Key file expiration date: XXXX-XX-XX
```

After displaying this report **Dr.Web Scanner** terminates. In order to scan for viruses or neutralize detected threats you must specify additional command-line parameters.

By default **Dr.Web Scanner** starts with the following parameters:

```
-ar -ha -fl- -ml -sd -al -ok
```

These parameters are optimal for thorough anti-virus protection and can be used in most typical cases. If any parameters is not required, you can disable it with "–" postfix as described above.

Disabling scan of archives and packed files will significantly decrease anti-virus protection level, because viruses are often distributed in archives (especially, self-extracting), enclosed in e-mail attachments. Office documents potentially susceptible to infection with macro viruses (Word, Excel) are also dispatched via e-mail in archives and containers.

When you run **Dr.Web Scanner** with default parameters, no cure actions and no actions for incurable and suspicious files are taken. For these actions to be performed, you must specify corresponding command line parameters explicitly.

Following actions are recommended:

- `cu` – cure infected files and system areas without deleting, moving or renaming infected files;
- `icd` – delete incurable files;
- `spm` – move suspicious files;
- `spr` – rename suspicious files.

When **Dr.Web Scanner** is started with `cu` action specified, it will try to restore the original state of infected object. It is possible only if detected virus is a known virus, and cure instructions for it are available in virus database, though even in this case cure attempt may fail if infected file is seriously damaged by a virus.

If infected files are found inside archives they will not be cured, deleted, moved or renamed. To cure such files you must manually unpack archives to the separate directory and instruct **Dr.Web Scanner** to check it.

When **Dr.Web Scanner** is started with action `icd` specified, it will remove all infected files from disk. This option is suitable for incurable (irreversibly damaged by virus) files.

`spr` action makes **Dr.Web Scanner** replace file extension with

another extension (`*.#??` by default, i.e. first extension character is replaced with "#" character). Enable this parameter for files for other operating systems detected heuristically as suspicious. Renaming helps to avoid accidental execution of such files in these operating systems and therefore prevents infection.

`spm` action makes **Dr.Web Scanner** move infected or suspicious files to the quarantine directory (`%var_dir/infected/` by default). This option actually has a little value since infected and suspicious files for other operating systems can not infect or damage UNIX system. Moving of suspicious files for UNIX system may cause system malfunction or failure.

Recommended command for day-to-day scanning:

```
$ drweb <path> -cu -icd -spm -ar -ha -fl- -ml -sd
```

You can save this command to the text file and convert it into simple shell script with command:

```
# chmod a+x [filename]
```

Dr.Web Scanner default settings could be changed in the configuration file.

Dr.Web Daemon

Dr.Web Daemon is a background antivirus module **drwebd**, designed to perform scanning for viruses on request from other **Dr.Web** software components. It can scan files on disk or data transferred through socket. Requests for scanning are sent using special protocol via UNIX sockets or TCP sockets. **Dr.Web Daemon** uses the same antivirus engine (**Dr.Web Engine**) and virus databases as **Dr.Web Scanner** and is able to detect and cure all known viruses.

Dr.Web Daemon is always running and has simple and straightforward protocol for sending scanning requests. Because of that, it is a perfect solution to be used as antivirus filter for for Internet gateways. In the **Dr.Web for Unix Internet gateways** solution **Dr.Web Daemon** is integrated with applications using ICAP protocol.

Command-line Parameters

To run **Dr.Web Daemon**, use the following command:

```
drwebd [parameters]
```

where the following `parameters` are allowed:

Short case	Extended case	Arguments
`-h, -?`	`-help, --help`	
Description: Show information about supported command line parameters on the screen and terminate module		
`-a`		`<Agent socket address>`
Description: Start **Dr.Web Daemon** in a central protection mode under control of the specified copy of **Dr.Web Agent**		
`-ini`		`<path to file>`

Short case	Extended case	Arguments
Description: Module must use the specified configuration file		
	--foreground	<yes|no>
Description: Operation mode of **Dr.Web Daemon**. If yes is specified, **Dr.Web Daemon** will be a foreground process. In other case (no) it will be a background process		
	--check-only	<command line parameters for checking>
Description: Check of a **Dr.Web Daemon** configuration correctness at start. If any command line parameters are specified, correctness of their values also will be checked		
	--only-key	
Description: **Dr.Web Daemon** should receive from **Dr.Web Agent** at start only the license key file		

Running Dr.Web Daemon

When **Dr.Web Daemon** is started with default settings, the following actions are performed:

- Configuration file is located and loaded. If configuration file is not found, then loading process terminates. Path to configuration file can be specified at startup by the command line parameter `-ini: {path/to/your/drweb32.ini}` or default value (`%etc_dir/drweb32.ini`) can be used. At start several configuration parameters get validated, and if parameter value is incorrect, default value is applied;
- Log file is created. User account used by **Dr.Web Daemon** must have appropriate privileges to write to the log file directory. Users do not have write permission for the default log directory (`/var/log/`). If **User** parameter is specified, you must also redefine **LogFileName** parameter and provide alternative log file location;

- Key file is loaded from the location specified in configuration file. If the key file is not found, then loading process terminates;
- If **User** parameter is specified, **Dr.Web Daemon** will offer to create an appropriate user account (default value is `drweb`) and to use it with the permissions provided;
- **Dr.Web Engine** (`drweb32.dll`) is loaded. If **Dr.Web Engine** is damaged or not found (because of some errors in configuration file), then loading process terminates;
- Virus databases are loaded in arbitrary sequence from the location specified in configuration file. If virus databases are damaged or absent, loading process proceeds;
- **Dr.Web Daemon** enters daemon mode, so all information about loading problems can not be output to console and is written to log file;
- Socket for interaction between **Dr.Web Daemon** and other **Dr.Web for Unix Internet gateways** solution modules is created. When TCP-sockets are used, there can be several connections (loading continues if at least one connection is established). When UNIX socket is used, **Dr.Web Daemon**'s user account must have appropriate privileges to read from the directory containing this socket and write to it. User accounts for modules must have execution access to the directory itself and write and read access to the socket file. Users do not have write permission for the default socket directory (`/var/run/`). If **User** parameter is specified, you must also redefine **Socket** parameter and provide alternative path to socket file. If UNIX socket was not created, then loading then loading process terminates;
- PID-file with **Dr.Web Daemon** PID information and transport addresses is created. User account used by **Dr.Web Daemon** must have appropriate privileges to write to the directory containing PID-file. Users do not have write permission for the default socket directory (`/var/run/`). If **User** parameter is specified, you must also redefine **PidFile** parameter and provide alternative path to PID-file. If PID-file was not created, then loading then loading process terminates.

Dr.Web Daemon Testing and Diagnostics

If no problems have occurred during initialization, **Dr.Web Daemon** is ready to work. To make sure that daemon have initialized correctly, issue command

```
$ netstat -a
```

and check whether necessary sockets have been created.

TCP sockets:

```
. . .
Active Internet connections (servers and established)
Proto   Recv-Q   Send-Q   Local Address   Foreign Address
State
. . .
tcp     0        0        localhost:3000  *:*
LISTEN
. . .
```

Unix socket:

```
. . .
Active UNIX domain sockets (servers and established)
Proto   RefCnt   Flags   Type    State      I-Node   Path
. . .
unix    0       [ ACC ]  STREAM  LISTENING  1127     %
var_dir/.daemon
. . .
```

If necessary sockets are missing from this list, there were problems

with **Dr.Web Daemon** initialization.

To run functional test and obtain service information use console client for **Dr.Web Daemon** (**drwebdc**).

TCP sockets:

```
$ drwebdc -nHOSTNAME -pPORTNUM -sv -sb
```

Unix socket:

```
$ drwebdc -uSOCKETFILE -sv -sb
```

It should output report to the console similar to this:

```
- Version: DrWeb Daemon 6.00
- Loaded bases:
Base /var/drweb/bases/drwtoday.vdb
contains 5 records.
Base /var/drweb/bases/drw60003.vdb
contains 409 records.
Base /var/drweb/bases/drw60002.vdb
contains 543 records.
Base /var/drweb/bases/drwebase.vdb
contains 51982 records.
Base /var/drweb/bases/drw60001.vdb
contains 364 records.
Total 53303 virus-finding records.
```

If that did not happen, run extended diagnostics.

For TCP socket:

```
$ drwebdc -nHOSTNAME -pPORTNUM -sv -sb -v
```

For UNIX socket:

```
$ drwebdc -uSOCKETFILE -sv -sb -v
```

More detailed report can identify the problem:

```
dwlib: fd: connect() failed - Connection refused
dwlib: tcp: connecting to 127.0.0.1:3300 - failed
dwlib: cannot create connection with a DrWeb daemon
ERROR: cannot retrieve daemon version
Error -12
```

You can test **Dr.Web Daemon** with special **eicar.com** program included in the installation package. Use your text editor of choice to transform `readme.eicar` into `eicar.com` (see instructions within the file).

For TCP-socket:

```
$ drwebdc -n<HOST> -p<PORT> eicar.com
```

For UNIX socket:

```
$ drwebdc -u<SOCKETFILE> eicar.com
```

It should output the following result:

```
Results: daemon return code 0x20
(known virus is found)
```

If that did not happen, check **Dr.Web Daemon** log file to see whether the file has been scanned. If the file has not been scanned, run extended diagnostic (see above).

If file was scanned successfully, **Dr.Web Daemon** is ready to operate.

When scanning very large archives, some issues with timeout expiration may occur. To fix this, increase values of `FileTimeout` and `SocketTimeout` parameters.

Please note that **Dr.Web Daemon** cannot scan files larger than **2 Gbytes**. Such files will not be sent to **Dr.Web Daemon** for scanning by clients.

Scanning Modes

Dr.Web Daemon can scan for viruses

- chunks of data received from socket (**remote scanning mode**);
- files on disk (**local scanning mode**).

In the **remote mode** client sends data to be scanned to **Dr.Web Daemon** through socket. **Dr.Web Daemon** can scan both anonymous memory and memory mapped to file system, the only difference will be logging information. This mode enables scanning files without read access but is less efficient than local scanning.

Local scanning mode is easier to use and provides better performance since client sends to **Dr.Web Daemon** only path to file to be scanned, not the whole file. Because clients can be located on different computers, the path must be specified with regard to the actual location of **Dr.Web Daemon**.

Local scan mode requires careful management of user privileges. **Dr.Web Daemon** must have read access to each file to be scanned. To perform **Cure** and **Delete** actions for files in mailboxes, you must also permit write access.

Please note, that properly configured system does not require **Dr.Web Daemon** to use root privileges.

Signal processing

Dr.Web Daemon can receive and process the following signals:

- `SIGHUP` – reload configuration file;
- `SIGTERM` – request correct **Dr.Web Daemon** termination;
- `SIGKILL` – force **Dr.Web Daemon** termination (if any problems have emerged);
- `SIGUSR1` – processes pool statistics to the log file.

Please note that `SIGUSR1` signal must be sent to parent process only, because child processes will be terminated in case receive of `SIGUSR1`.

Log Files and Statistics

Daemon Log

Since **Dr.Web Daemon** is a background program, information on its operation can only be obtained through log file. Log file contains details on processing of all scanning request sent to **Dr.Web Daemon**. You can set the log file location in parameter **`LogFileName`**.Alternatively, you can use **`syslog`** service to handle the logging (by specifying value `syslog` for parameter **`LogFileName`**).

Also, logging can be split to different files depending on **Dr.Web Daemon**'s client by setting **`ClientsLogs`** parameter. You can use this option to set up different **Dr.Web Daemon** log files for different clients that use the same **Dr.Web Daemon** to process their scanning requests.

Regardless of **`ClientsLogs`** parameter, if **Dr.Web Daemon** recognizes its client, scanning results will begin with prefix that identifies the client. Following prefixes are possible:

- `<web>` – **Dr.Web ICAPD**;
- `<smb_spider>` – **Dr.Web Samba SpIDer**;
- `<mail>` – **Dr.Web MailD**;
- `<drwebdc>` – console client for **Dr.Web Daemon**;
- `<kerio>` – **Dr.Web for Kerio Internet Gateways**;
- `<lotus>` – **Dr.Web for IBM Lotus Domino**.

On **FreeBSD** operating system information output to console by **Dr.Web Daemon** may be intercepted by **syslog** service and logged character-by-character. This is an issue of **FreeBSD** logging service that manifest itself if in `syslog.conf` configuration file logging level is set as `*.info`.

Processes pool statistics

Statistics on pool used for processing scanning request is output to the log file on receiving `SIGUSR1` signal (signal must be sent only to parent process, if a child process receives `SIGUSR1`, it will terminate) and on termination of **Dr.Web Daemon**.

A output of statistics of processes pool is controlled by **stat** value (`yes` or `no`), specified in the **ProcessesPool** parameter. Collected statistics is not aggregated. Each time the saved record contain statistics about pool state between previous and current moment of saving.

Example of pool statistics record output:

```
Fri Oct 15 19:47:51 2010 processes pool
statistics: min = 1 max = 1024 (auto)
freetime = 121 busy max = 1024 avg =
50.756950 requests for new process = 94
(0.084305 num/sec) creating fails = 0 max
processing time = 40000 ms; avg = 118646 ms
curr = 0 busy = 0
```

where:

- `min` – minimal number of processes in the pool;
- `max` – maximal number of processes in the pool;
- `(auto)` – displayed if limits on number of processes in the pool are determined automatically;
- `freetime` – maximum idle time for process in the pool;
- `busy max` – maximum number of simultaneous busy processes, `avg` - average number of simultaneous busy processes;

- `requests for new process` – number of request for new process creation (frequency of requests per second is displayed in parenthesis);
- `creating fails` – number of failed attempts of new process creation (failures are usually caused by insufficient resources);
- `max processing time` – maximum time for processing a single scanning request;
- `avg` – average time for processing a single scanning request;
- `curr` – current number of all processes in the pool;
- `busy` – current number of busy processes in the pool.

Configuration

Dr.Web Daemon can be used with default settings, but it could be convenient to configure it according to your specific requirements. **Daemon** settings are stored in `[Daemon]` section of the configuration file (`drweb32.ini` by default) which is located in `%etc_dir` directory. To use another configuration file specify full path to it with command-line option.

[Daemon]

EnginePath = {path to file}	Location of `drweb32.dll` module (anti-virus engine **Dr.Web Engine**). This parameter is also used by the **Dr.Web Updater**. Default value: **EnginePath** = %bin_dir/lib/drweb32.dll
VirusBase = {list of files (masks)}	Masks for loading virus databases. This parameter is also used by **Dr.Web Updater**. Multiple values are allowed (separated by commas). By default, virus databases files has a .

	vdb extension Default value: **VirusBase** = %var_dir/bases/*.vdb
UpdatePath = {path to directory}	This parameter is used by the **Dr.Web Updater** (update.pl) and is mandatory. Default value: **UpdatePath** = %var_dir/updates/
TempPath = {path to directory}	Directory where anti-virus engine **Dr.Web Engine** puts temporary files. It is used when system has insufficient memory or to unpack certain types of archives. Default value: **TempPath** = %var_dir/spool/
Key = {path to file}	Key file location (license or demo). Please note that **Dr.Web Daemon** and **Dr.Web Scanner** can have different license key files. In this case you must change the value of this parameter correspondingly. **Dr.Web Daemon** can use several license key files simultaneously. For each of them **Key** parameter value in [Daemon] section of drweb32.ini file must be specified. In this case **Dr.Web Daemon** tries to combine all license permissions from all available license key files. By default, key files has a .key extension Default value: **Key** = %bin_dir/drweb32.key
OutputMode = {Terminal | Quiet}	Output mode: • Terminal – console output

	• `Quiet` – no output Default value: **`OutputMode`** = `Terminal`
`RunForeground` = `{logical}`	Allows to disable or enable daemon mode for the **Dr.Web Dr.Web Daemon**. With `Yes` value specified **Dr.Web Daemon** will run as foreground process. This parameter can be used for certain monitoring utilities (for example, `daemontools`). Default value: **`RunForeground`** = `No`
`User` = `{text value}`	User which privileges will be used by the **Dr.Web Daemon**. It is strongly recommended to create separate **`drweb`** user account, which will be used by the **Dr.Web Daemon** and filters. It is not recommended to run **Dr.Web Daemon** with `root` privileges, even though it may take less time to set up. This parameter cannot be changed when reloading configuration using `SIGHUP`. Default value: **`User`** = `drweb`
`PidFile` = `{path to file}`	File to store **Dr.Web Daemon**'s PID and UNIX socket (if it is enabled by **`Socket`** parameter) or port number (if TCP socket is enabled by **`Socket`** parameter). If more than one **`Socket`** parameter is specified, this file will contain information on all the sockets (one per line). This file is created every time **Dr.Web Daemon** starts.

	Default value: **PidFile** = %var_dir/run/drwebd.pid
BusyFile = {path to file}	File where **Dr.Web Daemon**'s busy flag is stored. This file is created by a **Dr.Web Daemon** child process upon a receipt of the scan command and is removed after successful execution of the command. Filenames created by each **Dr.Web Daemon** child process are appended by a dot and ASCIIZ representation of PID (for example, /var/run/drwebd.bsy.123456). Default value: **BusyFile** = %var_dir/run/drwebd.bsy
ProcessesPool = {process pool settings}	Dynamic process pool settings. First number of processes in the pool must be specified: • auto – number of processes will be set automatically depending on system load; • N – unsigned integer number. Pool will have at least N active processes, additional processes will be created if necessary; • N-M – integer unsigned numbers, M>=N. Pool will have at least N active processes, additional processes will be created if necessary, but maximum total number of processes cannot exceed M. Then, optional secondary parameters may be specified: • **timeout** = {time in seconds} – timeout for closing an inactive

	process. This parameter does not affect first `N` processes which await requests continually. • **`stat`** = `{yes|no}` — statistics for processes in a pool. If `yes`, it is saved to the log file each time `SIGUSR1` system signal is received. • **`stop_timeout`** = `{time in seconds}` — maximum waiting period for stopping a working process. Default value: **`ProcessesPool`** = `auto`,**`timeout`** = `120`, **`stat`** = `no`, **`stop_timeout`** = `1`
`OnlyKey` = `{logical}`	Only license key file will be received from the **Dr.Web Agent**. Local configuration file will be used for all the settings. If the value of this parameter is `No`, and the address of a **Dr.Web Agent** socket is specified, **Dr.Web Daemon** will sends work statistics to **Dr.Web Agent** (sending of information will be carried out after scanning of each file). Default value: **`OnlyKey`** = `No`
`ControlAgent` = `{address}`	**Dr.Web Agent**'s socket address. **Example**: **`ControlAgent`** = `inet:4040@127.0.0.1,local:%var_dir/ipc/.agent` **Dr.Web Daemon** receives from the **Dr.Web Agent** license key file (and configuration information in case **`OnlyKey`** = `No`. Also in this case socket is used for sending **Dr.Web Daemon**'s work statistics

	to **Dr.Web Agent**). Default value: **ControlAgent** = local:% var_dir/ipc/.agent
MailCommand = {string}	Shell command used by the **Dr.Web Daemon** and the **Dr.Web Updater** for sending notifications and information bulletins on new updates to the user (administrator) via e-mail. If the period before the key file (or one of the key files) expiration is less, than is specified in **NotifyPeriod** parameter, **Dr.Web Daemon** starts sending out notifications every time system starts, restarts or reboots. Default value: **MailCommand** = "/usr/sbin/ sendmail -i -bm -f drweb -- root"
NotifyPeriod = {numerical value}	This parameter value specifies how many days should be left before license expiration for the **Dr.Web Daemon** to start sending notifications of license renewal. If parameter value is set to 0, **Dr.Web Daemon** starts sending out notifications immediately after key file expires. Default value: **NotifyPeriod** = 14
NotifyFile = {path to file}	File with a timestamp of last notification of license renewal. Default value: **NotifyFile** = %var_dir/.notify

NotifyType = {Ever | Everyday | Once}	Frequency of license expiration notifications. • Once – notification is sent only once. • Everyday – notification is sent daily. • Ever – notification is sent with every **Dr.Web Daemon** restart and every database update. Default value: **NotifyType** = Ever
FileTimeout = {numerical value}	Maximum time (in seconds) allowed for the **Dr.Web Daemon** to perform a scan of one file. If parameter value is set to 0, time to scan of one file is unlimited. Default value: **FileTimeout** = 30
StopOnFirstInfected = {logical}	Enables or disables stopping file scan upon detection of the first virus. Default value: **StopOnFirstInfected** = No
ScanPriority = {signed numerical value}	Priority of **Dr.Web Daemon** process. Value must be in the following range: -20 (highest priority) to 19 (lowest priority for **Linux**) or 20 (lowest priority for **FreeBSD** and **Solaris**). Default value: **ScanPriority** = 0
FilesTypes = {list of file extensions}	File types to be checked "by type", i.e. when **ScanFiles** parameter (explained below) has ByType value. "*" and "?" wildcard characters are allowed.

	Default value: **FilesTypes** = EXE, COM, SYS, OV?, BAT, BIN, DRV, PRG, BOO, SCR, CMD, VXD, 386, DLL, FON, DO?, XL?, WIZ, RTF, CL*, HT*, VB*, JS*, INF, AR?, ZIP, R??, PP?, OBJ, LIB, HLP, MD?, INI, MBR, IMG, CSC, CPL, MBP, SHS, SHB, PIF, SO, CHM, REG, XML, PRC, ASP, LSP, MSO, OBD, THE*, NWS, SWF, BMP, MPP, OCX, DVB, CPY, MSG, EML
FilesTypesWarnings = {logical}	Notify about files of unknown types Default value: **FilesTypesWarnings** = Yes
ScanFiles = {All | ByType}	Scan only files with extensions specified in **FileTypes** parameter (value ByType) or all files (value All). Value ByType of this parameter can be used only in **local scan** mode (in other modes always used only All value). In mailboxes are always scanned all files (independent of **ScanFiles** parameter value). Default value: **ScanFiles** = All
CheckArchives = {logical}	Enables or disables checking of files in archives (RAR, ARJ, TAR, GZIP, CAB and others). Default value: **CheckArchives** = Yes
CheckEMailFiles =	Enables or disables checking mailbox files.

	Default value: **CheckEMailFiles** = Yes
ExcludePaths = {list of path | file masks}	Masks for files to be skipped during scanning. Multiple values are allowed (separated by commas). Default value: **ExcludePaths** = /proc,/sys,/dev
FollowLinks = {logical}	Determine if **Dr.Web Daemon** will follow symbolic links during scanning. Default value: **FollowLinks** = No
RenameFilesTo = {mask}	Mask for renaming infected or suspicious files if action Rename is specified. Default value: **RenameFilesTo** = #??
MoveFilesTo = {path to directory}	Path to the **Quarantine** directory. Default value: **MoveFilesTo** = %var_dir/infected/
BackupFilesTo = {path to directory}	Directory for backup copies of infected files made if requested action was Cure. Default value: **BackupFilesTo** = %var_dir/infected/
LogFileName = {syslog | file name}	Log file name. You can specify syslog as log file name and logging will be carried out by syslogd system service.

	In this case you must also specify **SyslogFacility** and **SyslogPriority** parameters. Default value: **LogFileName** = syslog
SyslogFacility = {syslog label}	Log type label which is used by syslogd system service. Default value: **SyslogFacility** = Daemon
SyslogPriority = {log level}	Logging priority (log verbosity level) when syslogd system service is used. Following levels are allowed: • Error • Alert • Warning • Info • Notice Default value: **SyslogPriority** = Info
LimitLog = {logical}	Enables or disables limit for log file size (if **LogFileName** value is not specified to syslog). If limit is enabled, **Dr.Web Daemon** will check the size of log file on startup or receiving the SIGHUP signal. If log file size is greater then MaxLogSize value, log file will overwritten with empty file and logging will begin from scratch. Default value: **LimitLog** = No
MaxLogSize = {numerical value}	Maximum log file size in Kbytes. Used only with **LimitLog** = Yes.

	Set this parameter value to `0` if you do not want log file to be unexpectedly modified at start up. Default value: **MaxLogSize** = 512
LogScanned = {logical}	Enables or disables logging of information about all scanned objects regardless whether they are infected or not. Default value: **LogScanned** = Yes
LogPacked = {logical}	Enables or disables logging of additional information about files packed with DIET, PKLITE and other utilities. Default value: **LogPacked** = Yes
LogArchived = {logical}	Enables or disables logging of additional information about files archived with various archiving utilities. Default value: **LogArchived** = Yes
LogTime = {logical}	Enables or disables logging of time for each record. Parameter is not used if **LogFileName** = syslog. Default value: **LogTime** = Yes
LogProcessInfo = {logical}	Enables or disables logging of every scanning process PID and filter address (host name or IP address) from which scanning has been activated. This data is put before each record. Default value: **LogProcessInfo** = Yes

RecodeNonprintable = {logical}	Non-printable characters output mode for a given terminal. Default value: **RecodeNonprintable** = Yes
RecodeMode = {Replace | QuotedPrintable}	Decoding mode for non printable characters if **RecodeNonprintable** = Yes. When **RecodeMode** = Replace all non-printable characters are substituted with **RecodeChar** parameter value (see below). When **RecodeMode** = QuotedPrintable all non printable characters are converted to quoted printable encoding. Default value: **RecodeMode** = QuotedPrintable
RecodeChar = {"?" | "_" | ...}	Sets character for replacing non-printable characters if **RecodeMode** = Replace. Default value: **RecodeChar** = "?"
Socket = {address list}	List of sockets to be used for communication with **Dr.Web Daemon** (separated by a commas). **Example**: Socket = inet:3000@127.0.0.1, local:%var_dir/.daemon Also you can specify socket address in PORT [interfaces] | FILE [access] format. For a TCP socket, specify decimal port number (PORT) and the list of interface names or IP addresses for incoming requests (interfaces).

	Example:
	`Socket = 3000 127.0.0.1, 192.168.0.100`
	For UNIX sockets, specify socket name (FILE) and access permissions in octal form (access).
	Example:
	`Socket = %var_dir/.daemon`
	Number of values of **Socket** parameter is not limited. **Dr.Web Daemon** will work with all correctly described sockets.
	To enable connections on all available interfaces set 3000 0.0.0.0 as a value for this parameter.
	Default value:
	`Socket = %var_dir/run/.daemon`

SocketTimeout = {numerical value}	Maximum time (in seconds) allowed for transferring data through socket (file scanning time is not included). If parameter value is set to `0`, this time is unlimited. Default value: `SocketTimeout = 10`
ClientsLogs = {string list}	Enables splitting the log files. If during communication with **Dr.Web Daemon** client uses the option to transfer its ID, log file will be substituted with the file specified in this parameter. Descriptions of log files are delimited by commas or whitespaces. If more than six values are set, configuration file is considered invalid. The log files are defined in the following way:

	`<client name1>:<path to file>, <client name2>:<path to file>`
	Client name may be one of the following:
	• `web` — **Dr.Web ICAPD**;
	• `smb_spider` — **Dr.Web Samba SpIDer**;
	• `mail` — **Dr.Web MailD**;
	• `drwebdc` — console client for **Dr.Web Daemon**;
	• `kerio` — **Dr.Web for Kerio Internet Gateways**;
	• `lotus` — **Dr.Web for IBM Lotus Domino**.
	Example:
	`drwebdc:/var/drweb/log/drwebdc.log,`
	`smb:syslog,`
	`mail:/var/drweb/log/drwebmail.log`

	Default value:
MaxBasesObsolescencePeriod = {numerical value}	Period in hours after last update, during which virus databases are considered up-to-date. When this period is over, notification that databases are obsolete will be output to console. If value is set to 0, database obsolescence will not be checked.
	Default value: **MaxBasesObsolescencePeriod** = 24

The following parameters can be used to reduce scanning time in archive files (some objects in archives will not be checked). Actions applied to skipped archives are determined in `ArchiveRestriction` parameter of the corresponding modules.

`MaxCompressionRatio` `= {numerical value}`	Maximum compression ratio, i.e. ratio of unpacked file size to packed file size. Parameter can take only natural values. If the ratio exceeds specified value, file will not be extracted and therefore will not be checked. E-mail message with such file is considered "mail bomb". If value 0 is specified, compression ratio will not be checked. Default value: **`MaxCompressionRatio`** `= 500`
`CompressionCheckThreshold` `= {numerical value}`	Minimum size of the file inside an archive in Kbytes, for which compression ratio check will be performed (if it is specified by the **`MaxCompressionRatio`** parameter). If value 0 is specified, check will not be performed. Default value: **`CompressionCheckThreshold`** `= 1024`
`MaxFileSizeToExtract` `= {numerical value}`	Maximum unpacked size for the file in an archive in Kbytes. If unpacked size exceeds specified value the archive will not be scanned. E-mail letter with such file is considered "mail bomb". If value 0 is specified, maximum unpacked size is unlimited. Default value: **`MaxFileSizeToExtract`** `= 40960`

MaxArchiveLevel = {numerical value}	Maximum allowed archive nesting level. If archive nesting level exceeds specified value, it will not be scanned. E-mail message with such file is considered "mail bomb". If value 0 is specified, depth of nesting level will not be checked Default value: **MaxArchiveLevel** = 8
MessagePatternFileName = {path to file}	Path to template for message about license expiration. You can define expiration message according to your requirements. You can use variables that will be substituted for the following values: • $EXPIRATIONDAYS — number of day left until the license would expire; • $KEYFILENAME — path to license key file; • $KEYNUMBER — license number; • $KEYACTIVATES — license activation date; • $KEYEXPIRES — license expiration date. If there is no user-defined template, standard message in English will be used. Default value: **MessagePatternFileName =** %etc_dir/templates/drwebd/msg.tmpl
MailTo = {email address}	Administrator email address to send messages about license expiration, virus databases obsolescence, etc.

	Default value: `MailTo =`

Dr.Web ICAPD

Dr.Web ICAPD module (**drweb-icapd**) integrates all components of **Dr.Web for Unix Internet gateways** solution with applications using ICAP protocol. At this moment ICAP support is implemented in **Squid** and **SafeSquid** proxy-servers.

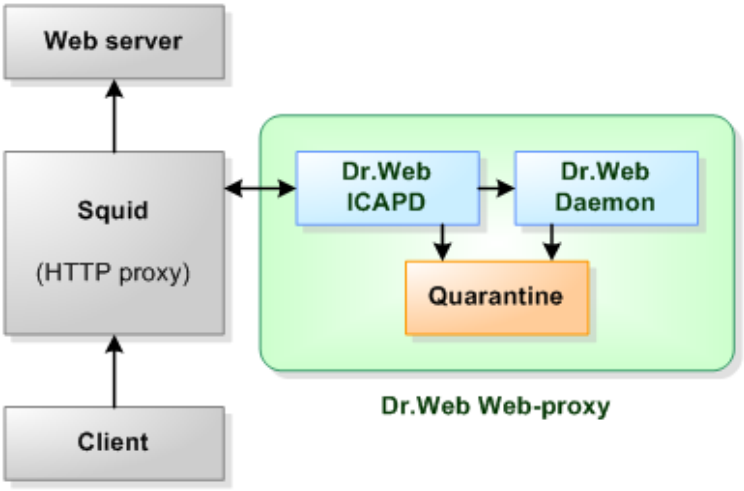
Dr.Web ICAPD establishes connection between **Dr.Web Daemon** and corresponding proxy-server to enable scan of incoming FTP and HTTP traffic for viruses. It also allows to filter access to html resources both by MIME-type and size of downloaded files and by the name of the host where these files reside. Also it is possible to restrict access to Web pages using predefined content-specific black lists.

Thus **Dr.Web ICAPD** module plays the key role in protection of Internet gateways.

Setting up interaction between Dr.Web ICAPD and Squid

Basic interaction scheme of proxy server **Squid**, `drweb-icapd` and the client looks like the following:

Figure 16. Basic interaction scheme



From this scheme you can learn how clients interact with HTTP server through the proxy server. Proxy server is client of ICAP server (**Dr.Web ICAPD**). **Dr.Web ICAPD** module is a client of **Dr.Web Daemon**. **Dr.Web ICAPD** allows to scan for viruses (using `drwebd` daemon) all HTTP traffic coming from HTTP server and passed from the proxy server via ICAP protocol. FTP traffic scan cannot be performed with such a scheme. Please refer to Setting up ftp-traffic scanning with **Squid** chapter to set up FTP traffic scanning with **Squid**.

HTTPS traffic apparently is not scanned.

To make **Squid** use **Dr.Web ICAPD** you must edit its configuration file `squid.conf` (usually located at `/usr/local/squid/etc`)

to enable ICAP protocol functions.

Find the lines presented below, uncomment them and edit default values (if necessary), or add them to the end of configuration file:

1. Enable ICAP:

```
icap_enable on
```

2. Register new ICAP service:

For Squid 3.0:

```
icap_service service_1 respmod_precache 0 ↵
icap://localhost:1344/respmod

icap_class class_1 service_1
icap_access class_1 allow all
```

For Squid 3.1:

```
icap_service service_1 respmod_precache bypass=0 ↵
icap://localhost:1344/respmod

adaptation_access service_1 allow all
```

Please, note that **icap_service** parameter is always specified in one line only. Symbol ↵ in this manual is designate breaking of long line.

If you plan to use preview mode you must enable additional settings.

3. Enable preview mode:

```
icap_preview_enable on
```

4. Specify size of message (in bytes) sent to preview:

```
icap_preview_size 0
```

5. Enable logging of information about IP of the client requesting resource:

```
icap_send_client_ip on
```

6. To enable persistent connections between drweb-icapd and Squid for improved performance:

```
icap_persistent_connections on
```

`respmod-postcache` mode is not yet implemented in **Squid**, so checking cache contents is not possible.

Setting up interaction between Dr.Web ICAPD and SafeSquid

To make **SafeSquid** use **Dr.Web ICAPD** you must edit corresponding configuration file `config.xml` or use Web interface.

If you prefer Web interface you should choose ICAP section from the drop-down menu and select **Add** item to add new ICAP interface. Then fill in the following fields:

- **Enabled** = true;
- **Host** = IP address or hostname where drweb-icapd is running (localhost by default);
- **File** = /respmod;
- **Port** = drweb-icapd listening port number (1344 by default);
- **Applies to** = responses;

and click **Submit** button.

You can also edit `config.xml` manually. For example, you can add:

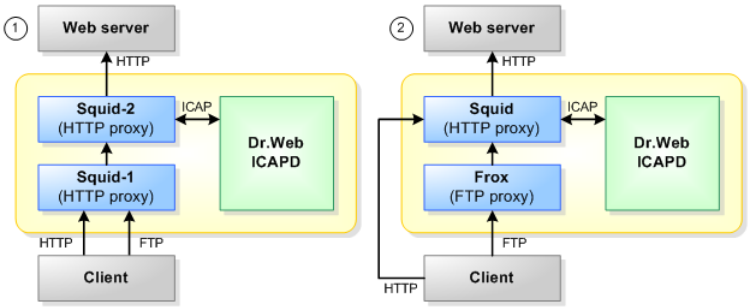
```
<icap>
  <enabled>true</enabled>
  <icap>
      <enabled>true</enabled>
      <comment>Dr.Web icap server</comment>
      <profiles></profiles>
      <host>localhost</host>
      <file>/respmod</file>
      <port>1344</port>
      <which>responses</which>
  </icap>
</icap>
```

to the **<safesquid></safesquid>** section.

Setting up FTP-traffic scanning with Squid

FTP-traffic transfer through **Dr.Web ICAPD** is possible only when using **Squid** proxy-server. If you need to scan both HTTP- and FTP-traffic you must install and use any one of two following schemes:

Figure 17. HTTP and FTP traffic scanning schemes



1. Using of sequence of two proxy servers Squid-Squid

All traffic from Internet will be checked by **Dr.Web ICAPD** as HTTP at the transit of it through **Squid-2**. All traffic through **Squid-2** will be defined as HTTP because **Squid-1** will convert FTP traffic to HTTP (and back). For implementation of this scheme it is required to execute the following:

1. Install two copies of **Squid** ("**Squid-1**" and "**Squid-2**") in different directories;
2. Change **http_port** parameter value of **Squid-1**, set new (not equal default) port number (for example, 3129);
3. Set up **Squid-2** to working with **Dr.Web ICAPD**, as described above;
4. Change configuration of **Squid-2** (for interaction with **Squid-1**) set value of the following parameter:

   ```
   cache_peer localhost parent 3129 3130 default ↵
   connect-timeout=80000
   ```

   where:
   - 3129 – number of port which is used by **Squid-1**;
   - localhost – host on which **Squid-1** is installed;
   - 80000 – value of timeout for interaction between **Squid-2** and **Squid-1**. This value should be big enough to provide correct interaction between the proxies;
5. Set up clients to working through proxy **Squid-2** both on HTTP traffic, and on FTP traffic;
6. Start both proxy servers **Squid** and **Dr.Web ICAPD**.

2. Using of sequence Frox-Squid, where Frox is FTP proxy server

All traffic from Internet also will be checked by **Dr.Web ICAPD** as HTTP at the transit of it through **Squid**. **Frox** will convert FTP traffic to HTTP (and back) and transmit it to **Sqiud**. For implementation of this scheme it is required to execute the following:

1. Install proxy servers **Frox** and **Squid**;
2. Set up **Frox** to transmitting data to **Squid** as HTTP (FTP

traffic from all FTP clients will be registered as HTTP traffic from one client – **Frox**);

3. Set up **Squid** to working with **Dr.Web ICAPD**, as described above;
4. Set up clients to working through proxy **Squid** on HTTP traffic, and through proxy **Frox** on FTP traffic;
5. Start both proxy servers (**Squid** and **Frox**), and **Dr.Web ICAPD**.

Preview Mode

`Preview` mode allows to specify files which should not be scanned (e.g., streaming video and audio). In this case they will not be loaded by ICAP-server. Therefore filtering by hostname or MIME-type and size will considerably reduce amount of external traffic. And using **`Allow`** `204` and **`preview_size`** `= 0` modes will help to decrease internal traffic. Thus, `preview` mode makes data transfer faster and more comfortable to the end-user.

When using **Squid** version `2.*`, it is highly recommended to disable `preview` mode both in `drweb-icapd` (**`UsePreview`** `= No`) and **Squid** (**`icap_preview_enable`** `off` and **`icap_preview_size`** `-1`).

In **SafeSquid** proxy-server instead of `preview` mode you can only get statistics for total amount of downloaded data.

Content-specific Lists

Dr.Web ICAPD supports content-specific black lists. Each of these lists is devoted to specific topic and contains corresponding set of URLs. The whole set of lists is updated automatically by **Dr.Web Updater** module. Predefined topics are:

- **Porno** – links to texts (erotic stories), forum topics (themes, devoted to discussion of some erotic matters, and spam topics with advertising of porno-sites), porno-archives, pornographic photo and video materials, internet sex-shops

and all other corresponding resources;

- **Violence** – links to photo and video materials, devoted to car accidents and plane crashes, natural disasters, wars, terrorist acts, torment, capital punishment, surgery, injury and physical defects;
- **Weapon** – links to texts, photo and video materials, devoted to all kinds of weapons (from cold steel to weapons of mass destruction) and explosives production;
- **Gamble** – links to internet-casino and various gambling and bookmaking sites;
- **Drugs** – links to resources, devoted to promotion of drugs usage (e.g. Texts about trip-reports), production and distribution of drugs;
- **Obscenity** – links to resources with obscene content and lexis;
- **Chats** – all chats;
- **Terrorism** – links to resources with propaganda materials, devoted to promotion of terroristic ideas and ideals, detailed descriptions of terroristic acts and explosives production;
- **Email** – links to resources providing free registration of electronic mailboxes;
- **SocialNetwork** – links to dating sites, business social networks, content-specific social networks (entirely devoted to one specific subject like photography or cooking), corporate social networks;
- **MalwareLinks** – links to sites containing viruses.

Restriction on access to Web pages on each theme specified, can be enabled/disabled independently by **`BlockNAME`** parameter, where **`NAME`** goes for a specific topic. Content-specific black lists are contained in files with `.dws` extension.

It is also possible to set user-defined black and white lists:

- Using the web interface;
- Manualy.

Creation of user-defined content-specific lists

- Create text file with a list of names or IP-addresses of hosts to which access should be allowed or denied. Every host is specified on a new line.
- Configure the desired reaction:
  - To add addresses to black list, specify a path to file which contain list of hosts in the value of **BlackHosts** parameter of the `%etc_dir/drweb-icapd32.ini` configuration file. This parameter can have multiple values, delimited by commas.

    Example:

    ```
    BlackHosts = /home/user/host_list_1, ↵
    /home/user/host_list_2
    ```

    In given example hosts specified in `host_list_1` and `host_list_2` files will be blacklisted and access will be denied.
  - To add files to whitelist, i.e. list of hosts that are allowed to access, specify a path to file which contain list of hosts in the value of **WhiteDWSFiles** parameter of the `%etc_dir/drweb-icapd32.ini` configuration file. Please note that when you specify the same host to white and black lists, access to them will be allowed.

    Example:

    ```
    WhiteDWSFiles = /home/user/host_list_1, ↵
    /home/user/host_list_3
    ```

    In this example users will have access to hosts specified in `host_list_1` and `host_list_3` files despite the fact that `host_list_3` file specified in **BlackHosts** parameter's value. Also, in case of coincidence of addresses in the Dws-files and whitelist addresses, access is allowed.

- To add list of host that doesn't require virus scanning, specify a path to file which contain list of hosts in the value of **WhiteDWSFiles** parameter of the `%etc_dir/drweb-icapd32.ini` configuration file.

  Example:

  ```
  WhiteHosts = /home/user/host_list_1, ↵
  /home/user/host_list_2, ↵
  /home/user/host_list_3
  ```

  In this case, hosts specified in `host_list_1`, `host_list_2` and `host_list_3` files will not be scanned for viruses. Please note, that **WhiteHosts** parameter only disables anti-virus scanning of hosts, but does not allow access. Thus for this example hosts listed in the `host_list_1` and `host_list_3 files` will not be scanned for viruses and access to hosts listed in `host_list_2` file is denied.

Command Line Parameters

The following command line parameters are supported by **Dr.Web ICAPD** (**drweb-icapd**):

Short case	Extended case	Arguments
-h	--help	
Description: Show information about supported command line parameters on the screen and terminate module		
-v	--version	
Description: Display **Dr.Web ICAPD** version on the screen and exit		
-d		
Description: Output debug log to the console		
-f		<path to file | path to Agent socket>

Short case	Extended case	Arguments
Description: Set new path to the **Dr.Web ICAPD** configuration file or to the **Dr.Web Agent** socket, if **Dr.Web ICAPD** receives configuration file from the **Dr.Web Agent**		
`-m`		
Description: **Dr.Web ICAPD** is set to work with **Dr.Web Monitor**		

Configuration

Dr.Web ICAPD can be used with default settings, but it could be more convenient to configure it according to your specific requirements. Configuration file of **Dr.Web ICAPD** (`drweb-icapd.ini`) is located in `%etc_dir` directory.

Description of configuration file structure and parameter types can be found in the Configuration files chapter of this Manual. Parameters are described in the order they are presented in configuration file.

`Logfile` = `{path to file | syslog}`	Log file name. You can specify `syslog` as log file name and logging will be carried out by `syslogd` system service. In this case you must also specify **`SyslogFacility`** and **`SyslogPriority`** parameters.
	Default value: **`Logfile`** = `syslog`
`SyslogFacility` = `{syslog label}`	Log type label which is used by `syslogd` system service.
	Default value: **`SyslogFacility`** = `Daemon`

SyslogPriority = {log level}	Logging priority (log verbosity level) when `syslogd` system service is used. Following levels are allowed: • `Alert` • `Warning` • `Info` • `Notice` Default value: **SyslogPriority** = `Info`
Loglevel = {numerical value}	Log verbosity level. Value of this parameter is a sum of arbitrary combination of the following values: • `0` – output information about errors and detected viruses; • `1` – output INFO level information: about checked clean files and other service information; • `2` – output general messages; • `4` – output chunk analysis messages; • `8` – output extended messages on chunks; • `16` – output syntax analyzer log; • `32` – output other debugging messages. **Example**: The value `18`, which equal `0 + 2 + 16`, specify output to log information about errors and detected viruses, general messages and messages of syntax analyzer. Thus, maximum possible value of parameter is equal to `63`. Please, note that value **Loglevel** = `-1` disable any output to log.

	Default value: **Loglevel** = 1
MaxLogSize = {size}	Maximum log file size. Each time **Dr.Web Daemon** starts, size of the log file is checked. If it is greater then **MaxLogSize** parameter value, log file will be overwritten. Set this parameter value to 0 if you do not want log file to be unexpectedly modified at start up. Default value: **MaxLogSize** = 1m
Hostmaster = {e-mail address}	Specifies e-mail address of administrator. Default value: **Hostmaster** = root@localhost
Infected = {action}	Action to be applied to files that might be cured. Curing may fail, and file may be cut to zero length as the result of curing. The following actions are available: Cure, Move, Truncate, Report. Default value: **Infected** = Cure
Incurable = {action}	Action to be applied to files containing incurable viruses. The following actions are available: Move, Truncate, Report. Default value: **Incurable** = Report

Suspicious = {action}	Action to be applied to possibly infected (suspicious) files. The following actions are available: Pass, Move, Truncate, Report. Default value: **Suspicious** = Report
Adware = {action}	Action to be applied to files containing advertizing software (adware). The following actions are available: Pass, Move, Truncate, Report. Default value: **Adware** = Report
Dialers = {action}	Action to be applied to files containing dialers. The following actions are available: Pass, Move, Truncate, Report. Default value: **Dialers** = Report
Jokes = {action}	Action to be applied to files containing joke programs. The following actions are available: Pass, Move, Truncate, Report. Default value: **Jokes** = Pass
Riskware = {action}	Action to be applied to riskware (potentially dangerous programs). The following actions are available: Pass, Move, Truncate, Report. Default value: **Riskware** = Pass

Hacktools = {action}	Action to be applied to programs for unauthorized access. The following actions are available: Pass, Move, Truncate, Report. Default value: **Hacktools** = Pass
ArchiveRestriction = {action}	Action to be applied to archives that cannot be scanned by **Dr.Web Daemon** due to the excess of limits set for archives in main configuration file. The following actions are available: Pass, Move, Truncate, Report. Default value: **ArchiveRestriction** = Report
DaemonError = {action}	Action to be applied to files causing errors during scan (e.g. **Dr.Web Daemon** has run short of memory or does not have proper privileges for further processing). The following actions are available: Pass, Move, Truncate, Report. Default value: **DaemonError** = Report
SkipObject = {action}	Action to be applied to files that cannot be scanned by **Dr.Web Daemon** (password protected or broken archive, symbolic link or non regular files). The following actions are available: Pass, Move, Truncate, Report. Default value: **SkipObject** = Pass

LicenseError = {action}	Action to be applied to files which evoked license error during scan (e.g. on license expiration). The following actions are available: Pass, Move, Truncate, Report. Default value: **LicenseError** = Report
Heuristic = {logical}	Enables or disables to **Dr.Web Daemon** to make heuristic detection of unknown viruses. Heuristic analysis can detect previously unknown viruses which are not included in the virus database. It relies on advanced algorithms to determine if scanned file structure is similar to the virus architecture. Because of that heuristic analysis can produce false positives: all objects detected by this method are considered suspicious. Please send all suspicious files to **Dr.Web** through http://vms.drweb.com/sendvirus/ for checking. To send suspicious file, put it in password protected archive, include password in message body and attach **Dr.Web ICAPD** report. Default value: **Heuristic** = Yes
LocalScan = {logical}	Enables or disables **local** scan mode, when only a path to file is sent to the **Dr.Web Daemon** for scan. If Yes value is specified, **Dr.Web Daemon** scans files in **local** mode. Default value: **LocalScan** = Yes
User = {user name}	User account with appropriate privileges to be used by **Dr.Web ICAPD**.

	It is strongly recommended to run **Dr.Web ICAPD** with the privileges of the user, under which **Dr.Web Daemon** operates. Default value: **User** = drweb
Cache = {path to directory}	Path to directory where temporary files are created and stored. Default value: **Cache** = %var_dir/cache/
DwsDirectory = {path to directory}	Path to directory containing predefined content-specific black lists (in .dws files). Default value: **DwsDirectory** = %var_dir/dws/
BlockPorno = {logical}	Option to block, by means of predefined content-specific black lists, resources containing pornography. Default value: **BlockPorno** = Yes
BlockViolence = {logical}	Option to block, by means of predefined content-specific black lists, resources containing violence. Default value: **BlockViolence** = Yes
BlockWeapon = {logical}	Option to block, by means of predefined content-specific black lists, resources devoted to weapons of all kinds. Default value: **BlockWeapon** = Yes
BlockGamble = {logical}	Option to block, by means of predefined content-specific black lists, resources devoted to gambling.

	Default value: **BlockGamble** = Yes
BlockDrugs = {logical}	Option to block, by means of predefined content-specific black lists, resources devoted to drugs and narcotics. Default value: **BlockDrugs** = Yes
BlockObscenity = {logical}	Option to block, by means of predefined content-specific black lists, resources containing obscene content. Default value: **BlockObscenity** = Yes
BlockChats = {logical}	Option to block all chats by means of predefined content-specific black lists. Default value: **BlockChats** = No
BlockTerrorism = {logical}	Option to block, by means of predefined content-specific black lists, resources devoted to terrorism. Default value: **BlockTerrorism** = Yes
BlockEmail = {logical}	Option to block, by means of predefined content-specific black lists, resources that provide free e-mail address registration. Default value: **BlockEmail** = No
BlockSocialNetwork = {logical}	Option to block access to all types of social networks by means of predefined content-specific black lists.

	Default value: **BlockSocialNetwork** = No
BlockSocialEngineering = {logical}	Option to block not recommended sites that may be used for phishing or other fraudulent purposes. Default value: **BlockSocialNetwork** = Yes
BlockMalwareLinks = {logical}	Option to block, by means of predefined content-specific black lists, resources containing malware. Default value: **BlockMalwareLinks** = Yes
BlockAll = {logical}	Option to block all Internet resources. Default value: **BlockAll** = No
WhiteDwsFiles = {paths to files list}	List of plain text files where each contains a list of hosts to be excluded from check on compliance with predefined content-specific black lists. This parameter is required, when content-specific black lists block access to necessary web sites. Hosts are presented in the following way: host1 host2 ... Default value: **WhiteDwsFiles** =

SendUrlsWithViruses = {logical}	Option to send addresses of web pages containing viruses and names of detected viruses to **Dr.Web** automatically. Please note, that **Dr.Web Agent** must be installed to provide passing of this information to **Dr.Web**. Default value: **SendUrlsWithViruses** = No
Templates = {path to directory}	Path to directory containing templates used to generate reports. Default value: **Templates** = %etc_dir/templates/icapd
PidFile = {path to file}	Specified file contains **Dr.Web ICAPD** PID and UNIX socket (if **Socket** parameter enables usage of UNIX socket) or port number (if **Socket** parameter enables usage of TCP socket). If more than one **Socket** parameter is specified, this file will contain information on all the sockets (one per line). This file is created every time **Dr.Web ICAPD** starts. Default value: **PidFile** = %var_dir/run/drweb_icapd.pid
Key = {path to file}	Path to the key file (license or demo). Usually key files has .key extension. Default value: **Key** = %bin_dir/drweb32.key
BlackHosts = {paths to files list}	List of files each containing list of hosts to be blocked. Block is performed by host name as well as

	by all its IP-addresses. Paths to files in list are separated by commas. Default value: **BlackHosts** =
WhiteHosts = {paths to files list}	List of files containing list of hosts to be excluded from check on viruses. This parameter is used to prevent false alarms of the anti-virus. Access is granted by host name as well as by its IP-addresses. Paths to files in list are separated by commas. Default value: **WhiteHosts** =
MaxBlocksize = {size}	Sets maximum size of memory block, which **Dr.Web ICAPD** tries to allocate at a time. If working memory level is sufficient, this parameter value can be increased for better performance. Default value: **MaxBlocksize** = 10m
BindPort = {numerical value}	Number of port to which ICAP-clients (e.g. **Squid**) connect, when establishing communication with **drweb-icapd**. Default value: **BindPort** = 1344
BindAddress = {host name | IP address}	Host where drweb-icapd resides. Default value: **BindAddress** = 127.0.0.1

DrwebAddress = {addresses list}	List of sockets used for connection to **Dr.Web Daemon**. Addresses in list are delimited by commas. **Examples**: **DrwebAddress** = inet:3000@localhost **DrwebAddress** = local:%var_dir/.daemon **DrwebAddress** = pid:/usr/local/drweb/run/drwebd.pid Note, that if you use **Dr.Web Daemon** running on remote machine, **LocalScan** parameter must be set to No. When socket address or path to **Dr.Web Daemon** PID-file are specified first, then each time connection to this addresses is not established, local scan becomes impossible. If **DrwebAddress** list is empty, then anti-virus check is not performed and **drweb-icapd** stays disconnected from the **Dr.Web Daemon**. Default value: **DrwebAddress** = pid:%var_dir/run/drwebd.pid
PathToQuarantine = {path to directory}	Path to the **Quarantine** directory. Default value: **PathToQuarantine** = %var_dir/infected/
QuarantineFilesMode = {access permissions}	Access permissions to files in the **Quarantine**. Default value: **QuarantineFilesMode** = 0660

Timeout = {numerical value}	Timeout in seconds for socket to wait for data receipt. Receipt/dispatch of one byte clears the timeout counter. If value 0 is specified, waiting time is unlimited. Default value: **Timeout** = 300
SendMail = {logical}	Whether to send notifications to administrator about attempts to open "bad" page. Notifications are sent to address specified in **Hostmaster** parameter. Default value: **SendMail** = No
SendMailDwsBlock = {logical}	Whether to send notifications to administrator about attempts to open Web pages blocked by content-specific black lists. Notifications are sent to the address specified in **Hostmaster** parameter. Default value: **SendMailDwsBlock** = No
MailCommand = {text}	Shell command executed in order to send notification to administrator about an attempt to open a "bad" page. Placeholder %s in command text will be replaced with **Hostmaster** parameter value. Default value: **MailCommand** = "/usr/sbin/sendmail -i -bm -f drweb -- %s"

MailCache = {numeric value}	Time span in seconds within which notifications about repeated attempts to open the same "bad" page are not sent to administrator. If value of this parameter is set to 0, notification is sent every time page is blocked. Default value: **MailCache** = 60
AclList = {paths to files list}	List of files with IP addresses and host names, from which access to is allowed. Paths to files in list are delimited by commas. If this list is empty, or not a single address is found in specified files, **drweb-icapd** accepts connections from all clients. Default value: **AclList** =
SendStat = {logical}	Whether to send statistics on detected viruses to **Dr.Web Agent** or not. Default value: **SendStat** = No
KeepAlive = {logical}	Whether to maintain permanent connection (keep connection alive) with proxy server or not. Default value: **KeepAlive** = Yes
UsePreview = {logical}	Preview mode. Specify No to disable this option, if your proxy server does not work correctly with preview mode. Default value: **UsePreview** = Yes

`[MimeStart – MimeEnd]` section of the configuration file contains set of rules for processing of files depending on their MIME-type. If you want to use this option, your proxy server must support preview mode and value of **`UsePreview`** parameter must be set to `Yes`.

Redifining parameters for user groups

There is a possibility for different users (or user groups) to set individual access options to Internet resources of various types. To enable this option some configuration parameters should be redefined for those users or groups. This can be implemented by special rules.

In the current version of **Dr.Web for Unix Internet gateways** you can redefine the following parameters:

- **`BlockPorno`**
- **`BlockViolence`**
- **`BlockWeapon`**
- **`BlockGamble`**
- **`BlockDrugs`**
- **`BlockObscenity`**
- **`BlockChats`**
- **`BlockTerrorism`**
- **`BlockEmail`**
- **`BlockSocialNetwork`**
- **`BlockMalwareLinks`**
- **`BlockAll`**

The rules are set in the `[match]` section of `drweb-icapd.ini` configuration file. The functions, that are used in rules, are set in the `[def]` section of the same configuration file. These sections can be in random order, but every function used in rules should be

defined in the `[def]` section beforehand. Corresponding expressions for rules and functions inside the `[match]` and `[def]` sections can be divided in several lines.

Variables

Every request, directed from the client to proxy-server has a number of unique parameters. You can use these parameters in rules, after you have specified them as variables:

Variable name	Variable type	Description
`request_url`	string	Request URL
`request_username`	string	The user name, used for authorization on a proxy-server. The name is extracted from the header of `X-Client-Username`. If the header is not present, the variable is set to empty line.
`request_ip`	IP-address with network mask (CIDR)	IP address of the user that sent a request to proxy-server. The address is extracted from the header of `X-Client-IP`. If the header is not present, the variable is set to `undefined`.
`system_time`	time	Current system time (hours and minutes).

Logical expressions

Logical expressions are the comparison and call-of-function operations united by the following logic operators: && (AND), || (OR), ! (NOT). You can use brackets to group operations (i.e. to change priority).

Syntax of logical expressions:

```
BOOL_EXPR:
      func_name()
      COMPARE
      ( BOOL_EXPR )
      ! BOOL_EXPR
      BOOL_EXPR && BOOL_EXPR
      BOOL_EXPR || BOOL_EXPR
```

Where `func_name()` is a call of function with the `func_name` name and `COMPARE` is one of the comparison operations listed below. Function should be defined in the [def] section beforehand.

Used notations at definition of comparison operations:

Notation	Description

`string_var`
`cidr_var`
`time_var`
	Variable of corresponding type (String, CIDR or Time).

`TIME`	String in the "HH: MM" or "H: MM" (hours, minutes) format, in quotation marks.
`STRING`	Random string in quotation marks.
`REGEX`	Regular expression of POSIX extended format in quotation marks.
`FILE_NAME`	Path to file in quotation marks.
`CIDR`	IPv4-address in quotation marks (possibly, with network mask with the leading slash sign). If network mask is not specified, then `/32` is implied. Empty string stands for special `undefined` value.

Supported comparison operations for variables of `string` type:

Operation	Description
`string_var == STRING`	Variable matches the string.
`string_var != STRING`	Variable doesn't match the string.

Operation	Description
`string_var ~ REGEX`	Variable contains the substring that is checked for matching with regular expression (search method is used).
`string_var == file:FILE_NAME`	Variable matches at least one string in the specified file.
`string_var ~ file:FILE_NAME`	Variable corresponds to at least one regular expression in the specified file.

== and ~ operations are not case-sensitive.

Supported comparison operations for variables of `cidr` type:

Operation	Description
`cidr_var <<= CIDR`	IP-address belongs to the network of specified range.
`cidr_var <<= file:FILE_NAME`	IP-address belongs to at least one of the networks, listed in specified file.

If for `<<=` operation both parameters have `undefined` value, the result of the operation is `true`. If only one parameter has `undefined` value, the result of this operation is `false`.

Supported comparison operations for variables of `time` type:

Operation	Description

`time_var > TIME`
`time_var >= TIME`
`time_var < TIME`
`time_var <= TIME`
	Time comparison.

Every operation has a certain priority with respect to other operation. In descending order of priority comparison operations are as follows:

1. `!` (NOT)
2. < (less than), <= (less than or equal to), > (greater than), >=

(greater than or equal to)

3. == (equal to), != (not equal to), ~ (match), <<= (belongs to)
4. && (AND)
5. || (OR)

Operations listed in the same line have equal priority and are evaluated from left to right.

For some operations, reading an array of values from a file (with the file: prefix) is possible. Lines beginning with the "#" or ";" characters or empty lines are skipped when reading values. The content of the file:FILE_NAME file is read when processing the configuration file. Thus, it is necessary to re-read the configuration if the content of the file with values (or a path to it) has been changed (for example, by sending the drweb-icapd daemon HUP signal).

Redefining Parameters: [match] section

The rules are set in [match] sections of drweb-icapd.ini configuration file. While setting rules, special if-statements are used.

Syntax of if-statement:

```
if BOOL_EXPR {
      configuration section
}
```

Where BOOL_EXPR is a logical expression and configuration section is a list of parameters, to which new values that are different from the "global" values specified in the configuration file have been assigned.

How to determine the value according to the rules of [match] section :

1. **Dr.Web ICAPD** detects whether the requested resource belongs to the category of blocked resources using content-specific black lists of Internet resources.
2. If the corresponding URL can be found in black lists (for

example, in the **Terrorism** list), then **Dr.Web ICAPD** requests **BlockNAME** parameter value, where **NAME** is a topic list (for example, **BlockTerrorism**).

3. First, the value of corresponding parameter is searched in the `[match]` section by the following algorithm:
   - for all request variables value of the `if`-statement expression is calculated,
   - if it is true for any of the variables, the required parameter is searched in the configuration section;
   - if this parameter is found, its value is returned and the search is completed,
   - if this parameter is not found or if the variable does not match the criteria specified by certain `if`-statement expression, **Dr.Web ICAPD** goes to the next `if`-statement.
4. If in the `[match]` section none of the rules can be applied to specific variables or do not contain the required parameter, it returns the global value of this parameter (or default value, if this parameter is not specified in the configuration file).

Parameter value search is implemented till the first match, and the first found value is returned (from configuration blocks of the `if`-statements with expressions whose value is `true`).

Functions: [def] section

Functions can be used in any logical expressions, however, each function must be defined before use. Functions are defined in [def] section. In one section can be defined several functions. There might be several [def] sections.

Syntax of the function definition:

```
func_name_1 = { BOOL_EXPR }
```

where `BOOL_EXPR` is a logical expression.

All functions return a Boolean value, the arguments are not supported. In fact, the function is just an shortened form of the expression.

Example:

Define the `is_localhost` and `local_ip` functions: these functions will be set to true, if the request came from one of these IP-addresses, or from one of the IP-addresses listed in the file.

```
[def]
is_localhost = { request_ip <<= "127.0.0.0/8" }
local_ip = {
      request_ip <<= "127.0.0.0/8"
      || request_ip <<= "192.168.0.0/16"
      || request_ip <<= "172.16.0.0/12"
      || request_ip <<= ↵
file:"/tmp/icapd/other_local_ips.txt"
}
```

Define a `worktime()` function: if the current system time is between 9:30 and 13:00 or 14:00 and 18:15, the function will be set to true.

```
[def]
worktime = {
 (system_time>="9:30" && system_time<="13:00")
 ||
 (system_time>="14:00" && system_time<"18:15")
}
```

Examples of use

If you want to block access to online resources from the **Porno** and **Email** lists during business hours for users of the local network, as well as for users with certain IP-address, you can use the following rule:

```
[match]
if (local_ip() ||
    request_ip <<= "87.249.57.20") &&
    worktime() {
      BlockPorno = yes
      BlockEmail = yes
}
```

If you want to block access to online resources from the **Terrorism** list in the night time (from 23:00 to 8:00) for users with certain IP-addresses, you can set the following rule:

```
[match]
if (request_ip <<= "93.185.182.46" ||
    request_ip <<= "195.98.93.66") &&
    (system_time>="23:00" ||
    system_time<="8:00")
{
      BlockTerrorism = yes
}
```

To prevent Internet access during off-hours for "edx" user:

```
[match]
if request_username=="edx" && !worktime()
{
      BlockAll = yes
}
```

Pay attention that `worktime()` function should be defined in `[def]` section beforehand.

To deny access to specific Internet resource for all users whose names match the "john .*" regular expression or any of the regular expressions listed in the file, or match one of the lines in the file, use the following rule:

```
[match]
if (request_username ~ "john.*" ||
 request_username ~ ↵
file:"/tmp/icapd/users_re_block.txt"
 || request_username == ↵
file:"/tmp/icapd/users_block.txt")
 && (request_url==↵
"http://example.com/mega_music.mp3")
{
     BlockAll = yes
}
```

Setting up Squid for Operation with Variables

You must make changes to **Squid** configuration to enable use of `request_username` and `request_ip` variables. Add the following lines to the `squid.conf` configuration file.

To enable use of request_ip:

```
# request_ip
icap_send_client_ip on
```

To enable use of request_username:

```
# request_username
icap_send_client_username on
icap_client_username_header X-Client-Username
icap_client_username_encode off
```

Interaction with Dr.Web Agent and Dr.Web Monitor

Dr.Web ICAPD can interact with **Dr.Web Agent** and **Dr.Web Monitor**.

Dr.Web ICAPD receives configuration information and keys from **Dr.Web Agent**. Thus, if **Dr.Web ICAPD** is launched under control of **Dr.Web Agent**, the **Key** parameter value in `drweb-icapd.ini` configuration file is ignored and the path to the license key file from **Dr.Web Agent** configuration file (`%etc_dir/agent.conf` by default) is used.

Dr.Web ICAPD can send information about detected viruses to **Dr.Web Agent** (statistics sending is controlled by a **SendStat** parameter of `drweb-icapd.ini` configuration file).

The **Dr.Web Agent**, in turn, can send the received information to the **Doctor Web** Web site. To do this, specify the `md5` sum of the key file in the **UUID** parameter of the `agent.conf` file.

Access to the collected statistics is implemented at http://stat.drweb.com/view/md5sum/, where `md5sum` is a value from **UUID** parameter.

You can connect **Dr.Web Agent** by specifying a path to **Dr.Web Agent** socket in
`-f` command line parameter at start of **Dr.Web ICAPD**.

Besides, you can use **Dr.Web Agent** to automatically send addresses of virus-infected Internet resources for analysis to **Doctor Web**, that will further allow to improve quality of the anti-virus.

Dr.Web Monitor allows to automate **Dr.Web ICAPD** start and to control its work. At starting by **Dr.Web Monitor**, **Dr.Web ICAPD** automatically requests configuration from **Dr.Web Agent**. To start **Dr.Web ICAPD** using **Dr.Web Monitor**, you should add `ICAPD` value to **RunAppList** parameter of **Dr.Web Monitor**

configuration file (by default, `%etc_dir/monitor.conf`) or specify `ICAPD` value in `-r` command line parameter at **Dr.Web Monitor** start. The script for automatic start of **Dr.Web ICAPD** should be removed from the system paths, since **Dr.Web Monitor** is now responsible for the start and stop of the component.

More details about **Dr.Web Agent** and **Dr.Web Monitor** you can see in chapters Dr.Web Agent and Dr.Web Monitor.

Start

Recommended running order is the following:

- **Dr.Web Daemon**;
- **Dr.Web ICAPD**;
- Used proxy server.

No matter in what order you lauch the components – not a single object will pass through unchecked, because either proxy server blocks data transfer if there's no connection to the **Dr.Web ICAPD** or **Dr.Web ICAPD** itself blocks data transfer if there's no connection to the **Dr.Web Daemon** (user will receive a notification instead of requested page).

Testing Dr.Web ICAPD

To test **Dr.Web ICAPD**, perform the following actions:

1. Make sure that values of **`Infected`**, **`Suspicious`** and **`Incurable`** parameters in `drweb-icapd.ini` configuration file are set to `Report`;
2. Visit http://www.eicar.org/download/eicar.com. In your browser window you will see a notification about infected file.

If you do not see the warning message, please check the following:

- for access to HTTP-traffic your browser uses **Squid** proxy server working with **Dr.Web ICAPD**;

- templates are copied to `%etc_dir/templates/icapd/` directory and paths to them in `drweb-icapd.ini` file are specified correctly.

Links to Squid and SafeSquid projects

Squid project:

http://squid-cache.org/.

ICAP support for **Squid**:

http://squid.sourceforge.net/icap/http://squid.sourceforge.net/projects.html#icap

SafeSquid project:

http://safesquid.com/.

Dr.Web Console for UNIX Internet Gateways

Setup and configuration of **Dr.Web for Unix Internet gateways** can be performed via the separate Web interface **Dr.Web Console for UNIX Internet Gateways**. It is implemented as a plug-in to **Webmin** (detailed information about **Webmin** interface is available on its official website at http://www.webmin.com/).

To achieve optimal performance of **Dr.Web Console for UNIX Internet Gateways** Web interface, please, make sure that the following **Perl** modules are installed to your system:

- **`XML::Parser`** – **Perl** module for parsing XML documents;
- **`XML::XPath`** – set of modules for parsing and evaluating XPath statements;
- **`CGI`** – **Perl** module enabling operation with Common Gateway Interface;
- **`CGI::Carp`** – **Perl** module for operation with error log;
- **`Cwd`** – **Perl** module for detection of current working directory of any process;
- **`Data::Dumper`** – **Perl** module for writing arbitrary data structures to memory and reading from it;
- **`Text::Iconv`** — **Perl** interface to `iconv()` codeset conversion function;
- **`Encode`** and **`Encode::Detect`** – modules used for encoding conversion;
- **`perl-devel`** (or **`libperl-dev`**, depending on the UNIX distribution);
- **`File::Basename`** – **Perl** module for parsing file names;
- **`File::Stat`** – object-oriented interface for a `stat()` function;
- **`POSIX`** – interface for POSIX-compliant functions;
- **`JSON`** – **Perl** module for parsing and converting to JSON

(JavaScript Object Notation).

- **Encode::CN** – module used for Chinese characters encoding.
- **Encode::HanExtr** – extra sets of Chinese encodings.
- **Switch** – module for `switch-case` statements usage.

If some modules are missing, it is recommended to install them from console. Root privileges are required. Names of the modules may vary, but usually they are included into the following packages: `perl-Convert-BinHex`, `perl-IO-stringy`, `perl-MIME-tools`, `perl-XML-Parser`, `perl-XML-XPath`. For installation in rpm-systems it is recommended to choose `noarch.rpm` packages.

Web interface layout and appearance may differ depending on **Webmin** version and browser used.

Due to peculiarities of **Webmin** implementation, **Dr.Web Console for UNIX Internet Gateways** web interface can not be correctly displayed in **Internet Explorer 7**. In case of problems with displaying of web-pages, try to use **Internet Explorer 8** or **9** (and later) or use another browser.

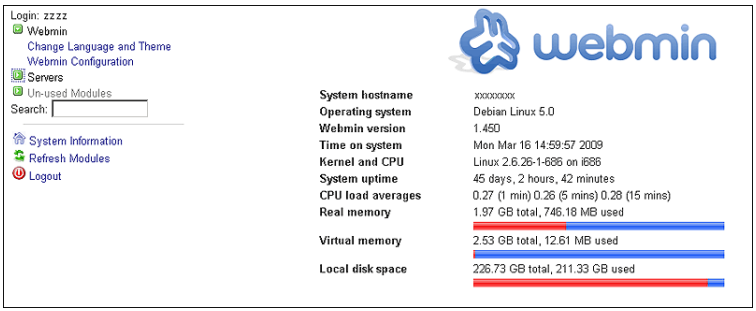
Installation

To start working with **Dr.Web Console for UNIX Internet Gateways**, do the following:

- install **Webmin**;
- install **Webmin** plug-in module **Dr.Web Console for UNIX Internet Gateways** located in `%bin_dir/web/`.

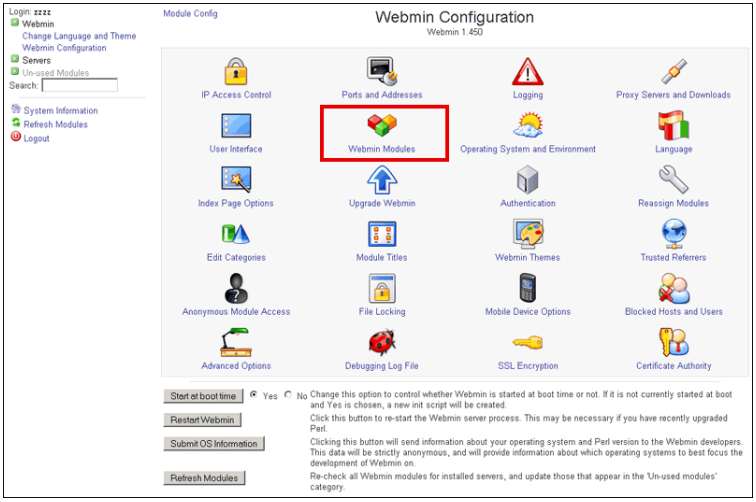
Webmin configuration and installation of modules is done using **Webmin** web interface.

Figure 18. Main page of Webmin Web interface



Installation of the new modules can be performed on **Webmin Configuration** page of the **Webmin** section of main menu, in **Webmin Modules** subsection.

Figure 19. Webmin Configuration



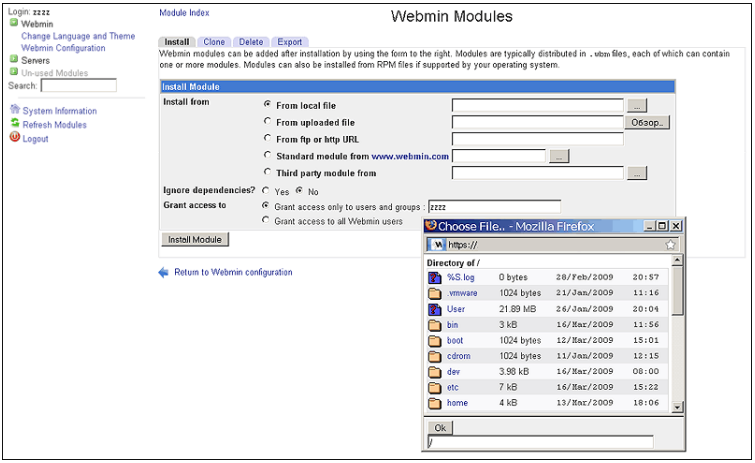
To install necessary modules:

1. Click the **Browse** button near the **From local file** text field on the **Webmin Modules** page. A separate browser window

will be opened to provide navigation through folders and files.

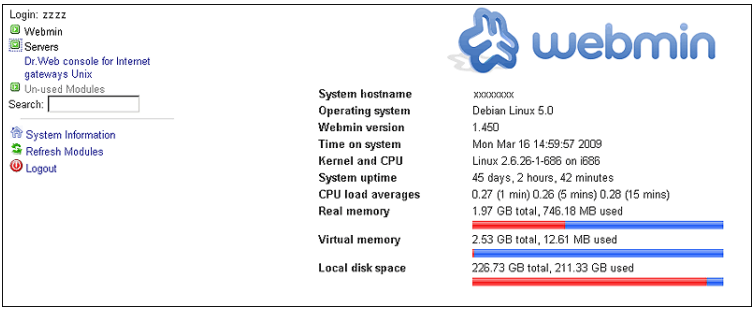
2. Choose the corresponding installation package from the list (`%bin_dir/web/drweb-icapd-web.wbm.gz` by default).

Figure 20. Webmin modules



3. One click on any item from the list selects it to the field below. With the second click on previously selected folder, it opens. With the second click on previously selected file, navigation window closes, and full path to selected file appears in **From local file** text field. You may also click **OK** button when you are finished with selection of required file.
4. After finishing with selection of the installation package file, click the **Install Module** button.
5. After installation is finished, in **Servers** section of main menu a link to the new **Dr.Web Console for UNIX Internet Gateways** module appears.

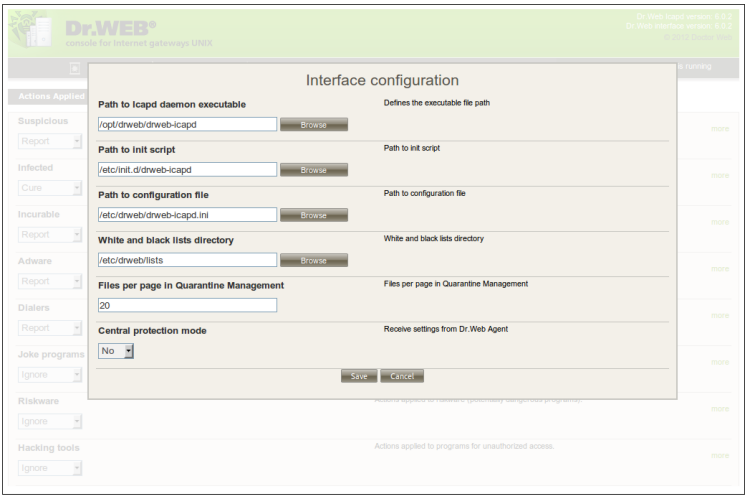
Figure 21. Dr.Web Console for UNIX Internet Gateways module



Basic configuration

You can change **Dr.Web Console for UNIX Internet Gateways** basic settings by clicking  in the navigational menu on the top of the page. There you can specify path to configuration file and to init script, path to directory containing black and white lists, number of files per page in **Quarantine** section and running mode.

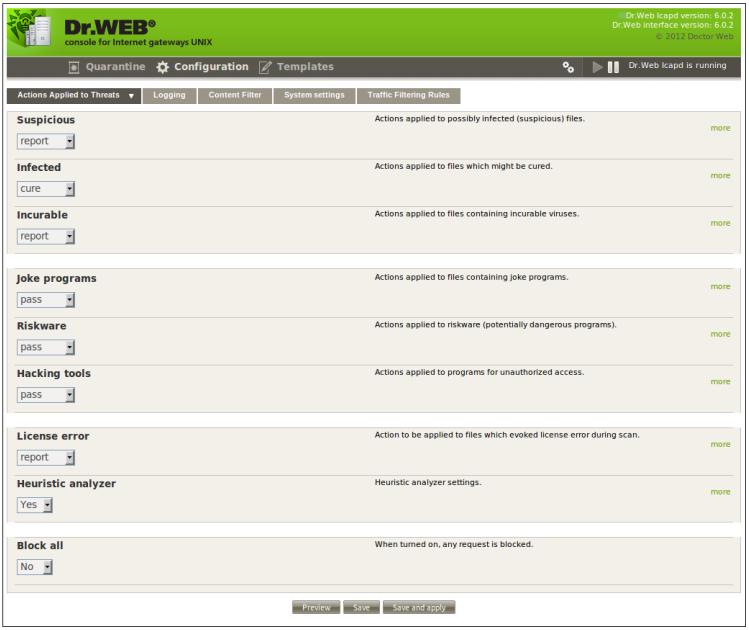
Figure 22. Module configuration



User interface

You will not be able to use standard browser **Back** function navigating through the **Dr.Web Console for UNIX Internet Gateways** chapter. If you click **Back** button or corresponding key combination, you will get straight to the previous chapter from main menu.

Figure 23. Dr.Web console for UNIX Internet gateways



On the right side of the module header information about current versions of **Dr.Web ICAPD** and **Dr.Web for Unix Internet gateways** Web interface is shown.

Under the module header there are three sections: **Quarantine**, **Configuration** and **Templates**. By default **General Settings** tab of **Configuration** section is opened.

Near section headers there are three buttons: **Interface Setup**, **Start Dr.Web Icapd** and **Stop Dr.Web Icapd** - with current status information string beside.

Configuration

This section provides the following possibilities for managing the work of **Dr.Web for Unix Internet gateways**:

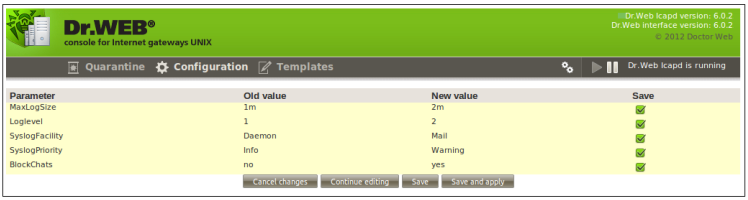
- Actions Applied to Threats - specify actions to be applied to different types of detected threats.
- Content Filter - block Web pages according to the type of their content.
- System settings - customize user-defined black and white lists of Internet resources, specify paths to the license key file and quarantine directory, specify the postmaster address for sending notifications about attempts to open Web pages with blocked content.
- Traffic Filtering Rules - set filtering rules to process the files according to their types.
- Logging - set logging options.

If **Dr.Web for Unix Internet gateways** is used in central protection mode, central protection server's administrator may block the setting from modifying. In that case you will not be able to change **Dr.Web for Unix Internet gateways** settings.

Parameters values can be selected from drop-down lists, by pressing  buttons and specified manually in corresponding text fields. Detailed description of almost each parameter can be found in corresponding reference beside, under the **more** link. After changing any parameter value you can immediately undo the change  or restore default value  only with one click on the corresponding icon appeared beside.

To revise all changes, click **Preview**. On the preview page you can choose whether to save or not all changes or some of them (by unchecking the box near each changed value). If you want to make additional changes, click **Continue Editing** to return to the previous page. If you want to cancel the changes, click **Cancel**. Click **Save** or **Apply and Save** to save and apply current changes.

Figure 24. Preview screen

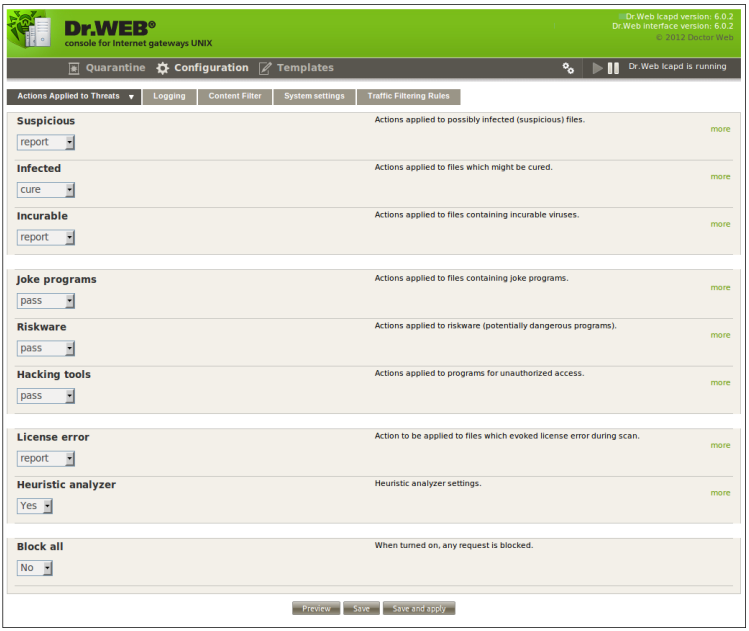


When you click to the button **Save** or **Apply and Save**, on page is shown a notice that the configuration is saved. Click on it by a mouse to return to page of settings.

Actions Applied to Threats

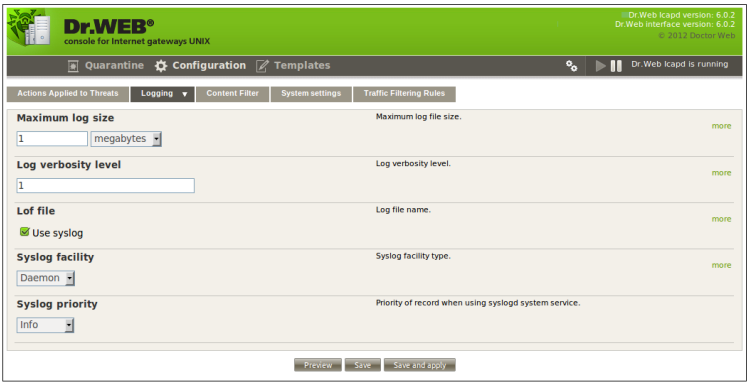
On this page you can specify actions to be applied to different types of detected threats. Every parameter has a drop-down menu with the list of possible actions. For the detailed information on available actions, click **more** link.

Figure 25. Actions Applied to Threats



Logging

Figure 26. Logging



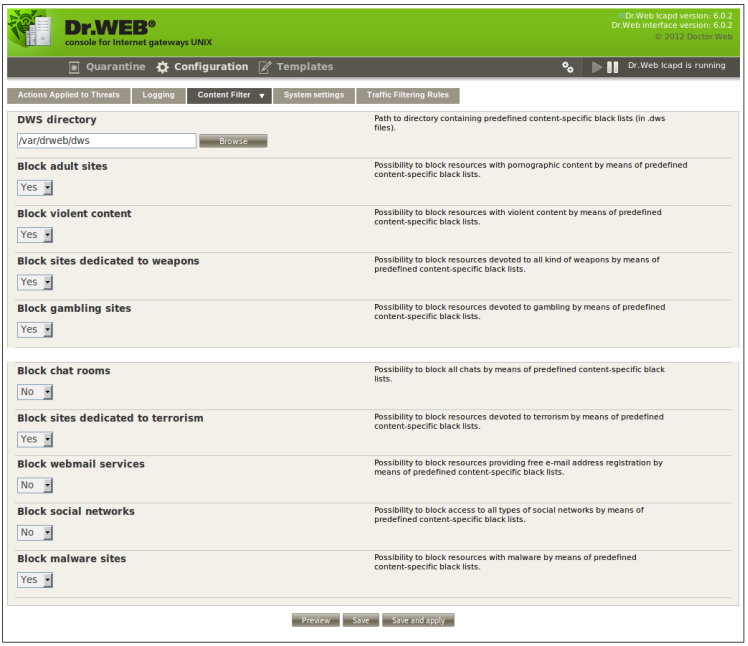
Values for parameters on this tab can be selected from drop-down menus or specified manually in corresponding text fields.

If you wish to specify manually certain file for logging of system events, uncheck **Use syslog** box and click **Browse** button. A separate browser window will be opened to provide navigation through folders and files.

Content Filter

On this page you can block Web pages according to the type of their content.

Figure 27. Content Filter

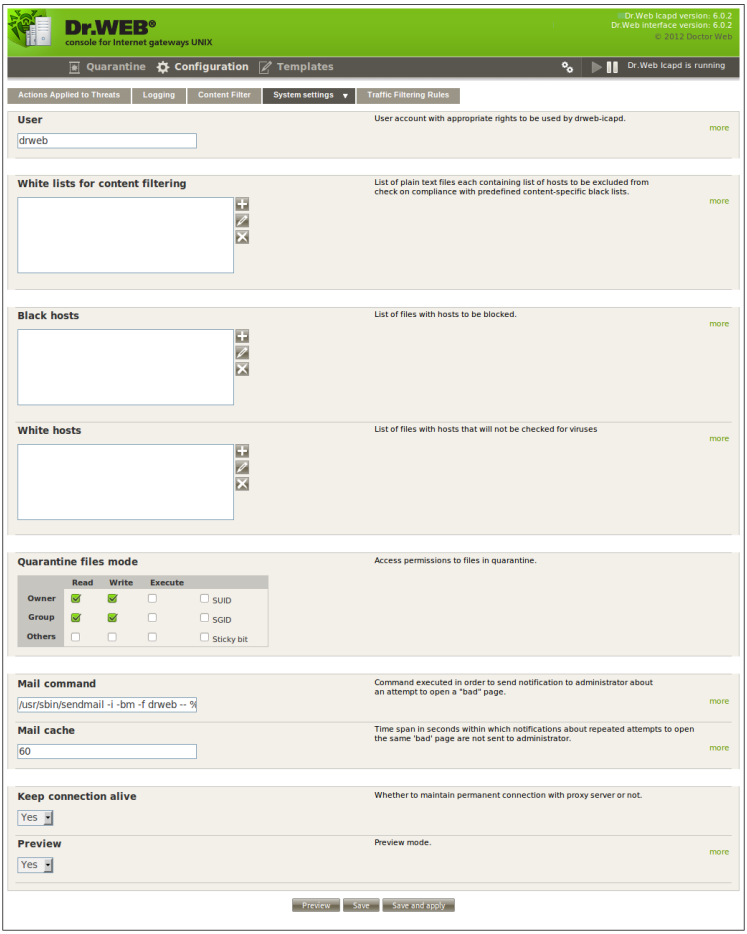


On this tab you can define whether to block web pages with specific content: pornography, violence, drugs, etc – or not. Each parameter on this tab has drop-down menu with two possible values: **Yes** or **No**. Path to directory with predefined content-specific black lists can be specified manually in corresponding text field near the **DwsDirectory** parameter, or you can click **Browse** and select the required directory in the navigation window.

System Settings

On this page you can customize user-defined black and white lists of Internet resources, specify paths to the license key file and quarantine directory, specify the postmaster address for sending notifications about attempts to open Web pages with blocked content.

Figure 28. System settings



In **Black Hosts** section user-defined black lists can be created. To create the list click  button, enter new list name (no white spaces are allowed) and desired host names one-by-one to the list below.

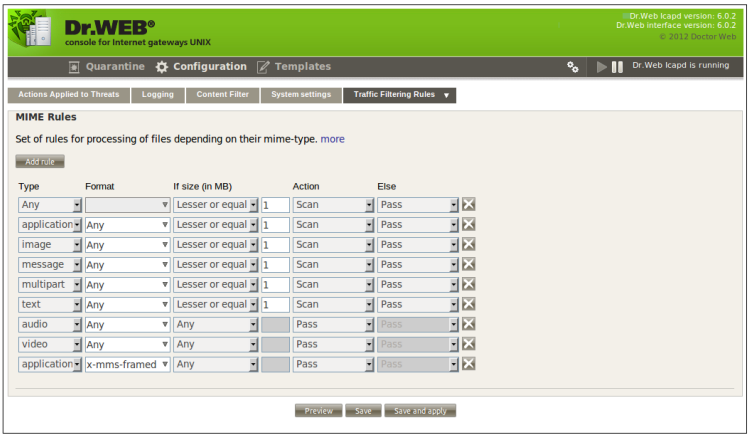
Figure 29. Creating user-defined list

In **White Hosts** and **White lists for content filtering** sections user-defined white lists can be created using the same algorithm. Hosts specified in files from **White Hosts** list will not be checked on viruses. Hosts specified in files from **White lists for content filtering** list will not be checked on compliance with content-specific black lists.

Traffic Filtering Rules

On this page you can set filtering rules to process the files according to their media types. Media type is a two-part identifier for file formats on the Internet. It is usually specified as `TYPE/Format`: `application/octet-stream` for files containing arbitrary binary data (`.com` files, `.exe` files), `multipart/x-zip` for `.zip` archives, `audio/mpeg` for `.mp3` files or other MPEG audio, etc. For each format a separate rule must be specified.

Figure 30. Traffic Filtering Rules



Click **Add rule** to add new rule. To delete rule click  button next to it.

Every rule contains the following fields:

- **Type** - basic MIME-type of the file.
  - **Any** - file of any type;
  - **application** - executables and archived files, documents in PDF, MS Word, etc.;
  - **audio** - audio files (mp3, wav, wma, etc);
  - **image** - images (gif, jpg, png, svg, etc);
  - **message** - messages between Web servers and clients;
  - **multipart** - containers (mail files, packed files);
  - **text** - text of source code (html, xml, css, etc);
  - **video** - video files (mpeg-1, mp4, wma)
  - **model** - 3d models files.
- **Format** - additional MIME-type of the file. Can be selected from a list or entered manually.
- **If size** - specify whether to filter files by size or not. If yes,

enter the size (in megabytes) in the corresponding field.

- **Action** - specify action for the files of the specified size.
- **Else** - specify action for all other files of this type.

The following syntax is used for traffic filtering rules:

```
<MIME-type> <action1> <size> <action2>
```

`<action1>` applies to the file that has `<MIME-type>` type if it's size (in megabytes) exceeds the value of `<size>`. Otherwise, `<action2>` is applied.

Dr.Web Console for UNIX Internet Gateways writes traffic filtering rules to configuration file and displays them in such form. If **If size** field is set to **Greater,** the rule will be reduces to the form described above.

Example:

Given the rule that all png format images with size greater than 10 megabytes should be checked for viruses. If the image size is less than or equal to 10 megabytes, it is passed.

After saving, the rule reduces to the form described above and displays as follows:

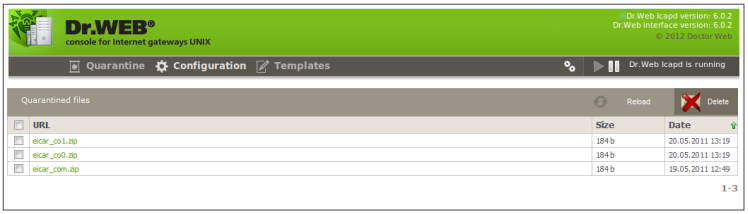
Thus, despite the difference in notation, this rule behaves similar to the original recording.

Quarantine

Dr.Web for Unix Internet gateways Quarantine contains list of links to quarantined files. Click the link to download the file, if you want to view it. When heuristic analyzer is enabled, suspicious files

are also moved to **Quarantine**. Names for the files are created according to special rules from addresses of Web pages that contained those files.

Figure 31. Quarantine

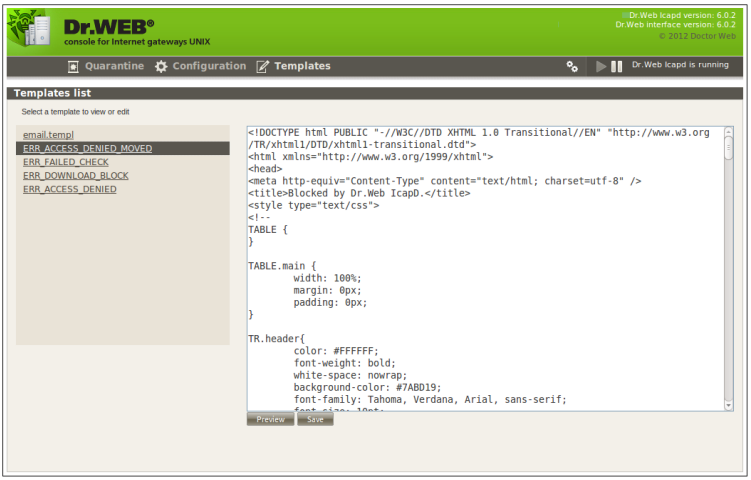


You can delete any file from **Quarantine** directory by selecting corresponding checkbox and clicking **Delete** button.

Templates

This section contains templates of Web pages to be displayed to the end user upon attempt to access blocked content (when actions **report** or **move** are specified for certain parameters in configuration section).

Figure 32. Templates



Template name	Description
ERR_FAILED_CHECK	Template for report, generated on file scan error.
ERR_DOWNLOAD_BLOCK	Template for report, generated on attempt to access blocked web pages (those from black lists).
ERR_ACCESS_DENIED	Template for report, generated on detection of prohibited content in file being downloaded, when corresponding parameter values are set to **report.**
ERR_ACCESS_DENIED_MOVED	Template for report, generated on detection of prohibited content in file being downloaded, when corresponding parameter values are set to **move.**
email.templ	Template for mail message to be sent to Administrator upon attempt to access any blocked content.

Run in Enterprise Mode

To startup **Dr.Web Console for UNIX Internet Gateways** in central protection mode, it is necessary to configure **Dr.Web Agent** as described in corresponding section. After making the necessary changes, click  in the navigational menu on the top of the page. In the Basic configuration window, set `Central Protection Mode` parameter value to `Yes`.

`Central Protection Mode` parameter can take two values:

- `No` – in this mode **Dr.Web Console for UNIX Internet Gateways** interacts with local configuration file and doesn't have access to configuration received by the **Dr.Web Agent** from **Dr.Web Enterprise Server**. Configuration changes made in this mode takes effect only when **Dr.Web Agent** is set to `Standalone` mode.
- `Yes` – **Dr.Web Console for UNIX Internet Gateways** receive configuration data from the **Dr.Web Agent**'s socket. If **Dr.Web Agent** work in `Stanalone` mode, the following warning is output on the **Dr.Web Console for UNIX Internet Gateways**:
  ```
  Error receiving settings: unable to
  establish connection with Dr.Web Agent.
  ```

If **Dr.Web Agent** have problems connecting to the server, the following behaviours are possible:

- If **Dr.Web Enterprise Server** is unavailable or authorization process fails during first time connection, **Dr.Web Agent** terminates. Check your settings and try to restart **Dr.Web Agent** and **Dr.Web Console for UNIX Internet Gateways**.
- If **Dr.Web Agent** had worked previously with this server, but it's temporary unavailable (for example, in the event of connection problems), **Dr.Web Agent** use backup copies of configuration files received from the server earlier. These files are encrypted and not intended for editing by users. Edited files becomes invalid.

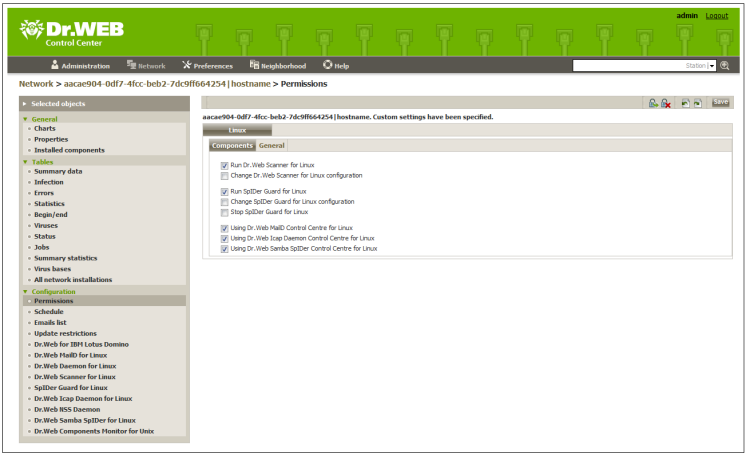
Configuration of User Permissions

When **Dr.Web Agent** run in `Enterprise` mode, **Dr.Web Control Center** administrator can partially or completely block user's permission to configure **Dr.Web** components installed on workstation.

To set permissions of workstation user:

- Enter the **Dr.Web Control Center**.
- In the main menu, select **Network**, then click the name of a workstation in the hierarchical list. In the control menu (left pane), select **Permissions.** This opens the permissions configuration window.

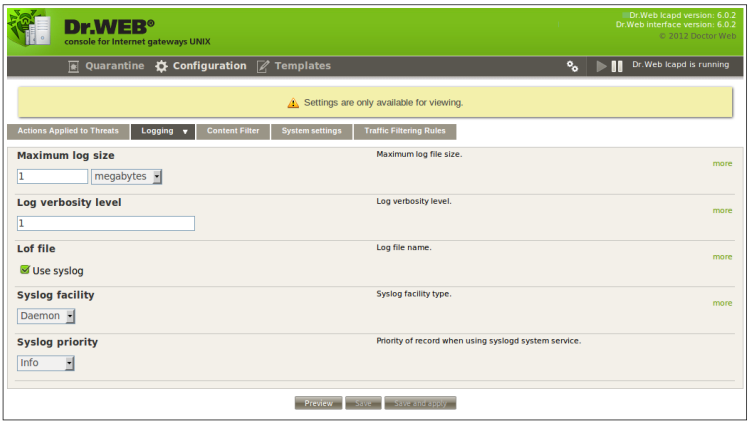
Figure 33. User permissions configuration



- In **Components** choose components aviable to change by workstation user. For example, to allow workstation user edit **Dr.Web for Unix Internet gateways** configuration, select the **Using Dr.Web Icap Daemon Control Centre for Linux** checkbox and push **Save.**
- To disable workstation user edit **Dr.Web for Unix Internet**

gateways configuration, clear the **Using Dr.Web Icap Daemon Control Centre for Linux** checkbox and click **Save.** In this mode **Console** display corresponding warning and block **Apply and Save Settings, Preview** and **Save** buttons.

Figure 34. Read-only user permissions



Configuration of Workstation

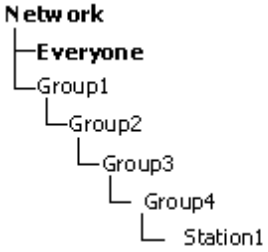
When a new workstation is created, its configuration settings are inherited from one of the groups it belongs to. That group called the *primary group*. If the settings of the primary group are modified, these changes are inherited by all workstations included into the group, unless the workstations have been customized. When creating a workstation, you can specify what group will be regarded as primary. By default, this is the **Everyone** group.

Inheritance in nested groups depends on group hierarchy. If a station have no personal settings, it inherits the configuration from parental group, and this process repeats recursively. Therefore the search for group configuration is performed upwards through the hierarchical tree of nested groups, starting from the station primary group and stopping at the root group. If no personal settings are selected for all the nesting groups, then the **Everyone** group

settings are inherited.

Example:

The structure of the hierarchical list is as follows:

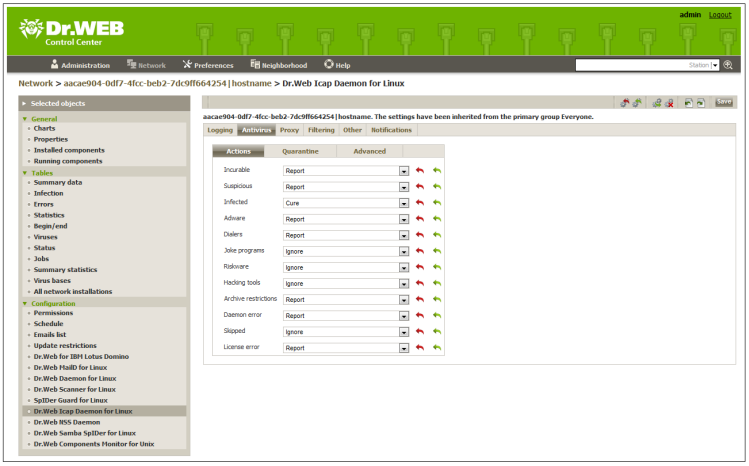


The `Group4` is the primary group for the `Station1`. To determine which settings to inherit for the `Station1`, the search is carried out in the following order: `Station1` → `Group4` → `Group3` → `Group2` → `Group1` → `Everyone`.

You can edit configuration inherited from the primary group in two ways:

- Using **Dr.Web Control Center** interface. To do so, select **Network** in the main menu, then click the name of a workstation in the hierarchical list. In the control menu (left pane), select the component you want to configure. To perform this operation you must have corresponding rights. Configuration process is similar to configuring via the Console. When necessary changes are made, click **Save** to save settings.

Figure 35. Configuration of Dr.Web Icap Daemon for Linux via Dr.Web Control Center interface



With appropriate permission, parameter can be reconfigured via **Dr.Web Console for UNIX Internet Gateways**. Configuration process is similar to configuring in Standalone mode. If workstation user has insufficient rights access is granted in read-only mode.

Types of Administrator Accounts

There are four types of administrator accounts:

- *Administrators with full rights* have exclusive rights to the administration of **Dr.Web Enterprise Server** and of the whole **Anti-virus network**. They can view and edit the configuration of the **Anti-virus network** and create new administrator accounts of both types. An administrator with full rights can configure the anti-virus software of a workstation, limit and disable user intervention into the administration of the anti-virus software on the workstation (see p. Setting Users' Permissions).

  Full-rights Administrator can view and edit the list of current administrator accounts.

- *Administrators with read-only rights* can only view the settings of the **Anti-virus network** and its separate elements, but cannot modify them.
- *Group Administrators* have access to all system group and those custom groups which they are allowed to manage (including nested groups). *Group Administrator* accounts could be created for custom groups only (see System and User Groups). Only those groups which such administrators are allowed to access are displayed for them in the hierarchical tree.

  The list of current administrator accounts is not available for *Group Administrators*.
- You can grant *Group Administrators with full-rights* to manage their groups as well as read-only rights.
- After **Dr.Web Enterprise Server** is installed, the **admin** account for administrator with full rights is created automatically. Access password for this account is specified during the **Dr.Web Enterprise Server** installation.

Thus, *Administrators with full rights* can:

- Add new and delete already existing administrators accounts.
- Edit settings for all administrators of **Anti-virus network**.

Group administrators and *administrators with read-only rights* can:

- Edit some of settings of their account only.

Contacts

Dr.Web for Unix Internet gateways solution is improved constantly. You can find the news and latest information on available updates on the website:

http://www.drweb.com/

Sales department:

http://buy.drweb.com/

Technical support:

http://support.drweb.com/

Please include the following information in the problem report:

- full name and version of your operating system;
- versions of **Dr.Web for Unix Internet gateways** modules;
- configuration files for all modules;
- log files for all modules.

Appendix. The License Policy

Dr.Web for Unix Internet gateways solution is available as a separate product and as a part of «universal» and «economy» **Dr. Web** kits. Types of licenses vary correspondingly.

All licenses can be purchased for definite terms, i.e. for 1, 2 or 3 years. Amount of protected file servers may also vary. License terms, their quantitative parameters and limitations may be different for various regional partners of **Doctor Web**, or may be revised hereafter.To learn more about regional license terms, contact our partner in your region. List of the **Doctor Web** trusted partners can be found on the corporate web site http://partners.drweb.com/.

During the whole license term client have the right to download updates from the **Dr.Web Global Updating System** (**Dr.Web GUS**) servers and to receive a technical support from **Doctor Web** and its partners.

Protection of Internet gateways

This license for **Dr.Web Daemon** and **Dr.Web ICAPD** components allow to use **Dr.Web Daemon** for scanning of incoming HTTP-traffic for viruses, and **Dr.Web ICAPD** – for integration of the whole system with proxy servers that support ICAP protocol (**Squid** and **SafeSquid**). In solutions based on **Squid** proxy server it is also possible to set up scanning of incoming FTP-traffic.

Dr.Web for Unix Internet gateways solution is being licensed according to the number of users working through an Internet gateway. Minimal license covers protection of 25 users.

Components continue to work 24 hours after the license has expired.

Address of product's page: http://products.drweb.com/gateway/unix/?lng=en