Dr.WEB

Enterprise Security Suite

Appendices

Dr.Web Enterprise Security Suite
Version 11.0.2
Appendices
5/14/2020

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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Chapter 1: Dr.Web Enterprise Security Suite

Introduction

About Manual

Documentation of Dr.Web Enterprise Security Suite anti-virus network administrator is intended to introduce general features and provide detailed information on the organisation of the complex anti-virus protection of corporate computers using Dr.Web Enterprise Security Suite.

Documentation of the anti-virus network administrator contains the following parts:

1. **Installation Manual** (the **drweb-11.0-esuite-install-manual-en.pdf** file)

   Installation Manual will be useful to the organisation manager who makes the decision to purchase and install a system of comprehensive anti-virus protection.

   Installation Manual explains how to build an anti-virus network and install its general components.

2. **Administrator Manual** (the **drweb-11.0-esuite-admin-manual-en.pdf** file)

   Administrator Manual is meant for *anti-virus network administrator*—the employee of organisation who is responsible for the anti-virus protection of computers (workstations and servers) of this network.

   Anti-virus network administrator should either have a system administrator privileges or work closely with a local network administrator, be competent in anti-virus protection strategy and know in detailes Dr.Web anti-virus packages for all operating systems that are used in the network.

3. **Appendices** (the **drweb-11.0-esuite-appendices-en.pdf** file)

   Appendices provide technical information, describes the configuration parameters of the Anti-virus modules and explains the syntax and values of instructions used for operation with them.

   > ⚠️ Documentation contains cross-references between mentioned documents. If you download these documents to the local computer, cross-references work only if documents are located in the same folder and have their initial names.

Also, the following Manuals are provided:

1. **Anti-virus Network Quick Installation Guide**

   Contains brief information on installation and initial configuration of anti-virus network components. For detailed information refer to administrator documentation.

2. **Manuals on managing stations**

   Contain the information about centralized configuration of anti-virus software of workstations which is provided by anti-virus network administrator via the Dr.Web Security Control Center.

3. **User Manuals**

   Contain the information about configuration of Dr.Web anti-virus software provided on protected stations directly.

All the listed Manuals are provided also within Dr.Web Enterprise Security Suite product and can be opened via Dr.Web Security Control Center.

Before reading these documents, make sure you have the latest version of the corresponding Manuals for your product version. The Manuals are constantly updated and the current version can always be found at the official web site of Doctor Web at https://download.drweb.com/doc/.

Conventions and Abbreviations

Conventions

The following symbols and text conventions are used in this guide:

Convention	Comment
⊕	Important note or instruction.
⚠	Warning about possible errors or important notes to which you should pay special attention.
Anti-virus network	A new term or an accent on a term in descriptions.
<IP-address>	Placeholders.
Save	Names of buttons, windows, menu items and other program interface elements.
CTRL	Keyboard keys names.
`C:\Windows\`	Names of files and folders, code examples.
Appendix A	Cross-references on the document chapters or internal hyperlinks to web pages.

Abbreviations

The following abbreviations can be used in the Manual without further interpretation:

- ACL—Access Control List,
- CDN—Content Delivery Anti-virus network,
- DB, DBMS—Database, Database Management System,
- DFS—Distributed File System,
- DNS—Domain Name System,
- Dr.Web GUS—Dr.Web Global Update System,
- FQDN—Fully Qualified Domain Name,
- GUI—Graphical User Interface, a GUI version of a program—a version using a GUI,
- LAN—Local Area Network,
- MTU—Maximum Transmission Unit,
- NAP—Network Access Protection,
- OS—Operating System,
- TTL—Time To Live,

- UDS—UNIX domain socket.

Chapter 2: Appendices

Appendix A. The Complete List of Supported OS Versions

For Dr.Web Server

UNIX system-based OS

ALT Linux School Server 5.0

ALT Linux School Server 5.0 x86_64

ALT Linux School 6.0

ALT Linux School 6.0 x86_64

ALT Linux 7

ALT Linux 7 x86_64

ALT Linux SPT 6.0 certified by FSTEC

ALT Linux SPT 6.0 certified by FSTEC x86_64

Debian/GNU Linux 7 Wheezy

Debian/GNU Linux 7 Wheezy x86_64

Debian/GNU Linux 8 Jessie

Debian/GNU Linux 8 Jessie x86_64

Debian/GNU Linux 9 Stretch

Debian/GNU Linux 9 Stretch x86_64

FreeBSD 10.3

FreeBSD 10.3 amd64

FreeBSD 10.4

FreeBSD 10.4 amd64

FreeBSD 11.0

FreeBSD 11.0 amd64

openSUSE Leap 42.1

openSUSE Leap 42.1 x86_64

RedHat Enterprise Linux 6

RedHat Enterprise Linux 6 x86_64

RedHat Enterprise Linux 7

RedHat Enterprise Linux 7 x86_64

RedHat Fedora 24

RedHat Fedora 24 x86_64

RedHat Fedora 25

RedHat Fedora 25 x86_64

RedHat Fedora 26

RedHat Fedora 26 x86_64

RedHat Fedora 27

RedHat Fedora 27 x86_64

RedHat Fedora 28

RedHat Fedora 28 x86_64

SUSE Linux Enterprise Server 10

SUSE Linux Enterprise Server 10 x86_64

SUSE Linux Enterprise Server 11

SUSE Linux Enterprise Server 11 x86_64

SUSE Linux Enterprise Server 12

SUSE Linux Enterprise Server 12 x86_64

Ubuntu 10.04

Ubuntu 10.04 x86_64

Ubuntu 12.04

Ubuntu 12.04 x86_64

Ubuntu 14.04

Ubuntu 14.04 x86_64

Ubuntu 15.04

Ubuntu 15.04 x86_64

Ubuntu 15.10

Ubuntu 15.10 x86_64

Ubuntu 16.04

Ubuntu 16.04 x86_64

Ubuntu 16.10

Ubuntu 16.10 x86_64

Ubuntu 17.04

Ubuntu 17.04 x86_64

Linux glibc2.12

Linux glibc2.12 x86_64

Linux glibc2.13

Linux glibc2.13 x86_64

Linux glibc2.14

Linux glibc2.14 x86_64

Linux glibc2.15

Linux glibc2.15 x86_64

Linux glibc2.16

Linux glibc2.16 x86_64

Linux glibc2.17

Linux glibc2.17 x86_64

Linux glibc2.18

Linux glibc2.18 x86_64

Linux glibc2.19

Linux glibc2.19 x86_64

Linux glibc2.20

Linux glibc2.20 x86_64

Linux glibc2.21

Linux glibc2.21 x86_64

Linux glibc2.22

Linux glibc2.22 x86_64

Linux glibc2.23

Linux glibc2.23 x86_64

Linux glibc2.24

Linux glibc2.24 x86_64

Linux glibc2.25

Linux glibc2.25 x86_64

Linux glibc2.26

Linux glibc2.26 x86_64

Linux glibc2.27

Linux glibc2.27 x86_64

Astra Linux 1.3 x86_64

Astra Linux 1.4 x86_64

Astra Linux 1.5 x86_64

Astra Linux 1.6 x86_64

МСВС 5.0 x86_64

Windows OS

- 32 bit:

Windows XP Professional with SP3

Windows Server 2003 with SP2

Windows Vista

Windows Server 2008

Windows 7

Windows 8

Windows 8.1

Windows 10

- 64 bit:

Windows Vista

Windows Server 2008

Windows Server 2008 R2

Windows 7

Windows Server 2012

Windows Server 2012 R2

Windows 8

Windows 8.1

Windows 10

Windows Server 2016

For Dr.Web Agent and Anti-Virus Package

UNIX system-based OS

Linux for Intel x86/amd64 platform based on kernel ver. 2.6.37 or later, and using PAM and library glibc ver. 2.13 or later.

> ⚠ For systems operating on 64-bit platforms, support of 32-bit applications must be enabled.

The product was tested on the following **Linux** distributions (32-bit and 64-bit):

Linux distribution name	Versions	Additional libraries for the 64-bit version of the OS are required
Astra Linux Special Edition (Smolensk)	1.5	x86_64

Linux distribution name	Versions	Additional libraries for the 64-bit version of the OS are required
CentOS	6.9, 7.4	x86, x86_64
Debian	7.11, 8.10, 9.3	x86_64
Fedora	27	x86, x86_64
Red Hat Enterprise Linux	7.4	x86_64
SUSE Linux Enterprise Server	11 SP4, 12 SP3	x86_64
Ubuntu	14.04, 16.04	x86_64

Other **Linux** distributions that meet the above-mentioned requirements have not been tested for compatibility with Dr.Web for Linux but may be supported. If a compatibility issue occurs, contact technical support on the official website at https://support.drweb.com.

> If components of version 6 are connected to Dr.Web Enterprise Security Suite, please refer the documentation of the corresponding component to get information on the system requirements.

Windows OS

- 32 bit:

Windows XP Professional with SP2 and later

Windows Server 2003 with SP2

Windows Vista

Windows Server 2008

Windows 7

Windows 8

Windows 8.1

Windows 10

- 64 bit:

Windows Vista with SP2 and later

Windows Server 2008 with SP2

Windows Server 2008 R2

Windows 7

Windows Server 2012

Windows Server 2012 R2

Windows 8

Windows 8.1

Windows 10

Windows Server 2016

⚠️ For installation of Dr.Web Agents on stations operating under Windows Vista OS or Windows Server 2008 OS, it is recommended to install the SP2 updates for the corresponding operating system. Otherwise, errors caused by the functioning peculiarities of the operating system with an anti-virus software can be occurred.

Remote installation of Dr.Web Agents is not available on workstations under Windows OS of Starter and Home editions.

macOS

Mac OS X 10.7 (Lion)

Mac OS X 10.7 Server (Lion Server)

OS X 10.8 (Mountain Lion)

OS X Server 10.8 (Mountain Lion Server)

OS X 10.9 (Mavericks)

OS X Server 10.9 (Mavericks Server)

OS X 10.10 (Yosemite)

OS X Server 10.10 (Yosemite Server)

OS X 10.11 (El Capitan)

OS X Server 10.11(El Capitan Server)

macOS 10.12 (Sierra)

macOS Server 10.12 (Sierra)

macOS 10.13 (High Sierra)

macOS Server 10.13 (High Sierra)

Android OS

Android 4.4

Android 5.0

Android 5.1

Android 6.0

Android 7.0

Android 7.1

Android 8.0

Android 8.1.

Appendix B. The Description of the DBMS Settings. The Parameters of the DBMS Driver

> (!) You can get the structure of Dr.Web Server DB via the `init.sql` script, located in the etc subfolder of Dr.Web Server installation folder.

As a database for Dr.Web Server you can use the following variants:

- embedded DBMS;
- external DBMS.

Embedded DBMS

When setting access to DBMS for storage and processing of data, use the parameters described in the table **B-1** for embedded DBMS.

Table B-1. Embedded DBMS

Name	Default value	Description
DBFILE	database.sqlite	Path to the database file
CACHESIZE	2000	Database cache size in pages
SYNCHRONOUS	FULL	Mode of synchronous logging of changes in the database to the disk: • FULL—fully synchronous logging to the disk, • NORMAL—synchronous logging of critical data, • OFF—asynchronous logging.

The SQLite3 DBMS are provided as embedded—DBMS that is supported by the Server starting from version 10.

External DBMS

The following database management systems may be used to arrange the external database for Dr.Web Server:

- Oracle. The settings are given in [Appendix B2. Setting Up the Database Driver for Oracle](#).
- PostgreSQL. The settings necessary for PostgreSQL are given in [Appendix B3. Using the PostgreSQL DBMS](#).

- Microsoft SQL Server/Microsoft SQL Server Express. To access these DBMS, an ODBC driver may be used (setting up the parameters of the ODBC driver for Windows is given in Appendix B1. Setting Up the ODBC Driver).

> ⚠️ Microsoft SQL Server 2008 and later is supported. Microsoft SQL Server 2014 and later is recommended to use.
>
> ---
>
> Microsoft SQL Server Express DB is not recommended for anti-virus network with a large number of stations (from 100 and more).
>
> ---
>
> If the Microsoft SQL Server is used as an external DB for the Server under UNIX system-based OS, the proper operation via the ODBC with FreeTDS is not guaranteed.
>
> ---
>
> If warnings or errors occur in Dr.Web Server interaction with Microsoft SQL Server DBMS via the ODBC, please make sure that you are using the latest available DBMS version for this edition.
>
> How to determine updates level, you can find on the following page of Microsoft corporation: https://support.microsoft.com/en-us/kb/321185.

> ⓘ To reduce a number of deadlocks when using Microsoft SQL Server DBMS with the default transaction isolation level (READ COMMITTED), it is recommended that you enable the READ_COMMITTED_SNAPSHOT option by running the following SQL command:
>
> ```
> ALTER DATABASE <database_name>
> SET READ_COMMITTED_SNAPSHOT ON;
> ```
>
> The command above shall be run in implicit transaction mode and with a single existing connection to the database.

Comparison Characteristics

> ⚠️ An embedded DB can be used, if at most 200-300 stations are connected to the Server. If the hardware configuration of the computer with Dr.Web Server and the load level of other executing tasks are permissible, up to 1000 stations can be connected.
>
> Otherwise, you must use an external DB.
>
> If you use an external DB and more than 10 000 stations are connected to the Server, it is recommended to perform the following minimal requirements:
>
> - 3 GHz processor CPU,
> - RAM at least 4 GB for Dr.Web Server and at least 8 GB for the DB server,
> - UNIX system-based OS.

When choosing between an embedded and external database, take into account the following peculiar parameters of DMBS:

- In large anti-virus networks (of over 200-300 stations), it is recommended to use an external DB, which is more fault-resistant than embedded DBs.

- The embedded DBMS is considerably faster than the external analogs and is recommended mainly for the typical use of databases.

- You may use an external database in case it will be necessary to work through a DBMS and access the DB directly. To facilitate access, standard APIs may be used, such as OLE DB, ADO.NET or ODBC.

B1. Setting Up the ODBC driver

When setting access to DBMS for storage and processing of data, use the parameters described in the table **B-2** for external DBMS (specific values are given for example).

Table B-2. Parameters for ODBC connection

Name	Value	Description
DSN	drwcs	Data set name
USER	drwcs	User name
PASS	fUqRbrmlvI	Password
TRANSACTION	DEFAULT	Possible values of the TRANSACTION parameter: • SERIALIZABLE • READ_UNCOMMITTED • READ_COMMITTED • REPEATABLE_READ • DEFAULT The DEFAULT value means "use default of the SQL server". More information on transactions isolation see in documentation on corresponding DBMS.

> ⚠ To exclude encoding problems, you must disable the following parameters of ODBC-driver:
>
> - **Use regional settings when outputting currency, numbers, dates and times**—may cause errors during numerical parameters formatting.
> - **Perform translation for character**—may cause illegal characters displaying in Dr.Web Security Control Center for parameters, which are came from the DB. This parameter sets symbols displaying dependence on the language parameter for programs, which do not use the Unicode.

The database is initially created on the SQL server with the above mentioned parameters.

It is also necessary to set the ODBC driver parameters on the computer where Dr.Web Server is installed.

> ⊙ Information on ODBC driver setup under UNIX sytem-based OS you can find at http://www.unixodbc.org/ in the **Manuals** section.

ODBC Driver Setup for Windows OS

To configure ODBC driver parameters

1. In Windows OS **Control Panel**, select **Administrative tools**; in the opened window double-click **Data Sources (ODBC)**. The **ODBC Data Source Administrator** window will be opened. Go to the **System DSN** tab.

2. Click **Add**. A window for selecting a driver will be opened.

3. Select the item of the corresponding ODBC-driver for this DB in the list and click **Finish**. The first window for setting access to the DB server will be opened.

> ⚠ If an external DBMS is used, it is necessary to install the latest version of the ODBC driver delivered with this DBMS. It is strongly recommended not to use the ODBC driver supplied with Windows OS. Except databases, supplied by Microsoft without ODBC-driver.

4. Specify access parameters to the data source, the same as parameters in the settings of Dr.Web Server. If the DB server is not installed on the same computer as Dr.Web Server, in the **Server** field, specify IP address or name of the DB server. Click **Next**.

5. Select the **With SQL Server authentication** option and specify necessary user credentials to access the DB. Click **Next**.

6. In the **Change the default database to** drop-down list, select the database which is used by Dr.Web Server. At this, the Server database name must be obligatory specified, but not the **Default** value.

   Make sure that the following flags are set: **Use ANSI quoted identifiers** and the **Use ANSI nulls, paddings and warnings**. Click **Next**.

> ⊙ If ODBC driver settings allow you to change the language of SQL server system messages, select **English**.

7. When you complete the configuration, click **Finish**. A window with the summary of the specified parameters will be opened.

8. To test the specified settings, click **Test Data Source**. After notification of a successful test, click **OK**.

B2. Setting Up the Database Driver for Oracle

General Description

The Oracle Database (or Oracle DBMS) is an object-relational DBMS. Oracle may be used as an external DB for Dr.Web Enterprise Security Suite.

> ⚠️ The Dr.Web Server may use the Oracle DBMS as an external database on all platforms except FreeBSD (see Installation and supported versions).

To use the Oracle DBMS

1. Install an instance of Oracle DB and set up the `AL32UTF8` encoding. Also you may use existence instance which is configured to use the `AL32UTF8` encoding.

2. Set up the database driver to use the respective external database. You can do this in configuration file or via Dr.Web Security Control Center: **Dr.Web Server configuration**, **Database** tab.

> ⚠️ If you are going to use the Oracle DB as an external database via the ODBC connection, then during installation (upgrading) of the Server, in the installer settings, disable the installation of embedded client for Oracle DBMS (in the **Database support → Oracle database driver** section).
>
> Otherwise, interaction with the Oracle DB via ODBC will fail because of the libraries conflict.
>
> ────────────────────────
>
> Connection to the Oracle database as the SYS and SYSTEM users, and also with the SYSDBA and SYSOPER privileges is forbidden.

Installation and Supported Versions

To use Oracle as en external DB, you must install the instance of the Oracle DB and set up `AL32UTF8` (`CHARACTER SET AL32UTF8 / NATIONAL CHARACTER SET AL16UTF16`) encoding. This can be done in one of the following ways:

1. Using an Oracle installer (use an external mode of instance installation and configuration).

2. Using the `CREATE DATABASE` SQL command.

For more information on creating and configuring Oracle instances, see Oracle documentation.

> ⚠️ In case of using a different encoding, national symbols may be displayed incorrectly.

A client to access the database (Oracle Instant Client) is included in the installation package of Dr.Web Enterprise Security Suite.

Platforms supported by the Oracle DBMS are listed on the web site of the vendor.

Platforms supported by the Oracle Client are listed on the web site of the vendor.

Dr.Web Enterprise Security Suite supports the Oracle DBMS of version 11 and later.

Also, please note the system requirements for Dr.Web Server when operating with the Oracle external database (see **Installation Manual**, p. System Requirements).

Parameters

To adjust access to the Oracle DBMS, use the parameters described in Table B-**3**.

Table B-3. Parameters of the Oracle DBMS

Parameter	Description
drworacle	Driver name
User	Database user name (obligatory)
Password	User password (obligatory)
ConnectionString	Database connection string (obligatory)

The format of the connection string to the Oracle DBMS is as follows:

//<host>:<port>/<service name>

where:

- *<host>*—IP address or name of the Oracle server;
- *<port>*—port that the server is 'listening';
- *<service name>*—name of the DB to connect to.

For Example:

`//myserver111:1521/bjava21`

where:

- `myserver111`—name of the Oracle server.
- `1521`—port 'listening' to the server.
- `bjava21`—name of the DB to connect to.

Oracle DBMS Driver Configuration

If you deploy Oracle, it is necessary to change the definition and the settings of the database driver by one of the following ways:

- In the Control Center: **Administration** item in the main menu → **Dr.Web Server configuration** item in the control menu → **Database** tab → select in the **Database** drop-down list, the **Oracle** type, and set parameters according to the format listed below.

- In the Server configuration file.

B3. Using the PostgreSQL DBMS

General Description

PostgreSQL is an object-relational DBMS distributed as a freeware unlike such commercial DBMS as Oracle Database, Microsoft SQL Server, etc. The PostgreSQL DBMS may be used to arrange an external DB for Dr.Web Enterprise Security Suite in large anti-virus networks.

To use PostgreSQL as an external database

1. Install the PostgreSQL server.
2. Set up Dr.Web Server to use the respective external database. You can do this in configuration file or via Dr.Web Security Control Center: in the **Dr.Web Server configuration** menu, the **Database** tab.

> ⚠️ To connect to the PostgreSQL DB you can use only trust, password and MD5 authorization.

Installation and Supported Versions

1. Download the latest available version of this free product (the **PostgreSQL** server and correspondent ODBC-driver), otherwise do not use the version earlier than **8.4**.
2. Create the PostgreSQL database by one of the following ways:

   a) Using the `pgAdmin` graphical interface.

   b) Using the `CREATE DATABASE` SQL command.

> ⚠️ Database must be created in the UTF8 encoding.

For more information about conversion to the external database see p. Changing the Type of the DBMS for Dr.Web Enterprise Security Suite.

Also, please note the system requirements for Dr.Web Server when operating with the PostgreSQL external database (see **Installation Manual**, p. System Requirements).

Parameters

When setting access to PostgreSQL, use parameters described in the table B-4.

Table B-4. PostgreSQL parameters

Name	Default value	Description
host	*<UNIX domain socket>*	PostgreSQL server host
port		PostgreSQL server port or name extension of the socket file
dbname	drwcs	Database name
user	drwcs	User name
password	drwcs	Password
options		Debug/trace options for sending to the Server
tty		File or tty to output at debug
requiressl		1 instructs to request a SSL connection; 0 does not instruct to make the request
temp_tablespaces		Name space for temporary tables
default_transaction_isolation		Transaction isolation mode (see PostgreSQL documentation)

More information can be found at http://www.postgresql.org/docs/manuals/.

Dr.Web Server and PosrtgreSQL DB Interaction via the UDS

If Dr.Web Server and the PostgreSQL DB are installed on the same computer, their interaction can be set via the UDS (UNIX domain socket).

To set interaction via the UDS

1. In the `postgresql.conf` PostgreSQL configuration file, specify the following directory for the UDS:

   ```
   unix_socket_directory = '/var/run/postgresql'
   ```

2. Restart the PostgreSQL.

Configuring the PostgreSQL Database

To increase performance during interaction with the PostgreSQL database, it is recommended to configure it according to the information from the official documentation on the database.

If you use a large database and dispose the appropriate computing resources, it is recommended to configure the following parameters in the `postgresql.conf` configuration file:

Minimal configuration:

```
shared_buffers = 256MB

temp_buffers = 64MB

work_mem = 16MB
```

Extended configuration:

```
shared_buffers = 1GB

temp_buffers = 128MB

work_mem = 32MB

fsync = off

synchronous_commit = off

wal_sync_method = fdatasync

commit_delay = 1000

max_locks_per_transaction = 256

max_pred_locks_per_transaction = 256
```

> ⚠ The `fsync = off` parameter significantly increases performance but may cause the complete loss of data in case of power failure or system crash. It is recommend to disable the `fsync` parameter only if you have a backup of the database for its full recovery.
>
> ─────────────────────
>
> Configuration of the `max_locks_per_transaction` parameter can be useful to ensure smooth operation at a mass appeal to the database tables, in particular, when upgrading the database to a new version.

B4. Using the MySQL DBMS

General Description

MySQL—cross-platform relational databases management system. MySQL DBMS may be used as an external DB for Dr.Web Enterprise Security Suite.

To use MySQL as an external database

1. Install the MySQL server.
2. Set up Dr.Web Server to use the respective external database. You can do this in configuration file or via Dr.Web Security Control Center: in the **Dr.Web Server configuration** menu, the **Database** tab.

Installation and Supported Versions

Dr.Web Enterprise Security Suite supports the following versions of MySQL DBMS:

- MySQL—from 5.5.14 to 5.7 and from 8.0.12 and later,
- MariaDB—10.0, 10.1, 10.2.

After DBMS installation, before creating a new database, it is necessary to specify the following settings in its configuration file (see your DBMS documentation for more details):

For MySQL of 5.X versions:

```
[mysqld]

innodb_large_prefix = true

innodb_file_format = barracuda

innodb_file_per_table = true

max_allowed_packet = 64M
```

For MySQL of 8.X versions:

```
[mysqld]

innodb_file_per_table = true

max_allowed_packet = 64M
```

If the used DBMS MariaDB has version earlier than 10.2.4, when you also must set the following in the configuration file:

```
binlog_format = mixed
```

Appendix C. Authentication of Administrators

> ! General information on authentication of administrators at Dr.Web Server is described in **Administrator Manual**, p. [Authentication of Administrators](#).

C1. Active Directory Authentication

Only enabling of using authentication method and the order in authenticators list are configured: in the `<enabled/>` and `<order/>` tags of the `auth-ads.conf` configuration file.

Operation principle:

1. Administrator specifies username and password in one of the following formats:
   - `username`,
   - `domain\username`,
   - `username@domain`,
   - user's LDAP DN.
2. Server registers with these name and password at the default domain controller (or at the domain controller which specified in the username).
3. If registration failed, transition to the next authentication mechanism is performed.
4. LDAP DN of registered user is determined.
5. For the object with determined DN, the `DrWebAdmin` attribute is read. If it has `FALSE` value, authentication is admitted failed and transition to the next authentication mechanism is performed.
6. If any of attributes are not defined at this stage, they are searched in groups to which the user is included to. For each group, its parental groups are checked (search strategy—inward).

> ! If any error occurs, transition to the next authentication mechanism is performed.

The `drweb-11.00.2-<build>-esuite-modify-ad-schema-<OS_version>.exe` utility (is included to the Server distribution kit) creates in Active Directory the `DrWebEnterpriseUser` new object class and defines new attributes for this class.

Attributes have the following OID in the Enterprise space:

```
#define DrWeb_enterprise_OID      "1.3.6.1.4.1"                    //
iso.org.dod.internet.private.enterprise
#define DrWeb_DrWeb_OID           DrWeb_enterprise_OID    ".29690"    // DrWeb
#define DrWeb_EnterpriseSuite_OID DrWeb_DrWeb_OID           ".1"        //
```

```
EnterpriseSuite
#define DrWeb_Alerts_OID          DrWeb_EnterpriseSuite_OID ".1"         // Alerts
#define DrWeb_Vars_OID            DrWeb_EnterpriseSuite_OID ".2"         // Vars
#define DrWeb_AdminAttrs_OID      DrWeb_EnterpriseSuite_OID ".3"         // AdminAttrs

// 1.3.6.1.4.1.29690.1.3.1 (AKA
iso.org.dod.internet.private.enterprise.DrWeb.EnterpriseSuite.AdminAttrs.Admin)

#define DrWeb_Admin_OID          DrWeb_AdminAttrs_OID     ".1"          // R/W admin
#define DrWeb_AdminReadOnly_OID  DrWeb_AdminAttrs_OID     ".2"          // R/O admin
#define DrWeb_AdminGroupOnly_OID DrWeb_AdminAttrs_OID     ".3"          // Group admin
#define DrWeb_AdminGroup_OID     DrWeb_AdminAttrs_OID     ".4"          // Admin's
group
#define DrWeb_Admin_AttrName          "DrWebAdmin"
#define DrWeb_AdminReadOnly_AttrName  "DrWebAdminReadOnly"
#define DrWeb_AdminGroupOnly_AttrName "DrWebAdminGroupOnly"
#define DrWeb_AdminGroup_AttrName     "DrWebAdminGroup"
```

Editing settings of Active Directory users is implemented manually at the Active Directory server (see **Administrator Manual**, p. Authentication of Administrators).

Assigning permissions to administrators performs according to the general principle of inheriting in the hierarchical structure of groups in which administrator is included.

C2. LDAP Authentication

Settings are stored in the `auth-ldap.conf` configuration file.

General tags of the configuration file:

- **`<enabled/>`** and **`<order/>`**—similar to the Active Directory.
- **`<server/>`** specifies the LDAP server address.
- **`<user-dn/>`** defines rules for translation of name to the DN (Distinguished Name) using DOS-like masks.

  In the **`<user-dn/>`** tag, the following wildcard characters are allowed:

  - `*` replaces sequence of any characters, except `.  ,  =  @  \` and spaces;
  - `#` replaces sequence of any characters.
- **`<user-dn-expr/>`** defines rules for translation of name to the DN using regular expressions.

  For example, the same rule in different variants:

  ```
  <user-dn user="*@example.com" dn="CN=\1,DC=example,DC=com"/>
  <user-dn-expr user="(.*)@example.com" dn="CN=\1,DC=example,DC=com"/>
  ```

  `\1` .. `\9` defined the substitution place for values of the *, # or expression in brackets at the template.

  According to this principle, if the user name is specified as `login@example.com`, after translation you will get DN: "`CN=login,DC=example,DC=com`".
- **`<user-dn-extension-enabled/>`** allows the `ldap-user-dn-translate.ds` (from the `extensions` folder) Lua-script execution for translation usernames to DN. This script runs

after attempts of using the `user-dn`, `user-dn-expr` rules, if appropriate rule is not found. Script has one parameter—specified username. Script returns the string that contains DN or nothing. If appropriate rule is not found and script is disabled or returns nothing, specified username is used as it is.

- Attributes of LDAP object for DN determined as a result of translation and their possible values can be defined by tags (default values are presented):

```
<!-- DrWebAdmin attribute equivalent (OID 1.3.6.1.4.1.29690.1.3.1) -->
<admin-attribute-name value="DrWebAdmin" true-value="^TRUE$" false-value="^FALSE$"/>
```

As a values of `true-value`/`false-value` parameters, regular expressions are specified.

- If undefined values of administrators attributes are present, and the `<group-reference-attribute-name value="memberOf"/>` tag is set in the configuration file, the value of the `memberOf` attribute is considered as the list of DN groups, to which this administrator is included, and the search of needed attributes is performed in this groups as for the Active Directory.

C3. LDAP/AD Authentication

Configuration File

Settings are stored in the `auth-ldap-rfc4515.conf` configuration file.

Configuration files with typical settings are also provided:

- `auth-ldap-rfc4515-check-group.conf`—configuration file template for administrators external authorization via LDAP using the simplified scheme with verification of belonging to an Active Directory group.

- `auth-ldap-rfc4515-check-group-novar.conf`—configuration file template for administrators external authorization via LDAP using the simplified scheme with verification of belonging to an Active Directory group and using variables.

- `auth-ldap-rfc4515-simple-login.conf`—configuration file template for administrators external authorization via LDAP using the simplified scheme.

General tags of the auth-ldap-rfc4515.conf configuration file:

- `<server />`—LDAP server definition.

Attribute	Description	Default value
base-dn	DN of an object entry relative to which the search is to be performed.	The rootDomainNamingContext attribute value of the Root DSE object
cacertfile	Root certificates files (UNIX only).	–
host	LDAP server address.	• Domain controller for the server under Windows OS.

Attribute	Description	Default value
		• `127.0.0.1` for the server under UNIX system-based OS.
`scope`	Search scope. Allowed values: • `sub-tree`—whole sub-tree below the base DN • `one-level`—direct descendants of the base DN • `base`—base DN.	`sub-tree`
`tls`	Establish TLS on the connection to LDAP.	`no`
`ssl`	Use the LDAPS protocol at connect to LDAP.	`no`

- **`<set />`**—variables set by LDAP search.

Attribute	Description	Default value
`attribute`	Attribute name the value of which is assigned to a variable. Cannot be absent.	–
`filter`	RFC4515 search filter in LDAP.	–
`scope`	Search scope. Allowed values: • `sub-tree`—whole sub-tree below the base DN • `one-level`—direct descendants of the base DN • `base`—base DN.	`sub-tree`
`search`	DN of an object entry relative to which the search is to be performed.	If absent, the `base-dn` of the **`<server />`** tag is used.
`variable`	Variable name. Must starts with the letter and contains letters and digits only. Cannot be absent.	–

Variables can be used in values of the `add` attributes of the **`<mask />`** and **`<expr />`** tags, in value of the `value` attribute of the **`<filter />`** tag as the `\varname`, and also in value of the `search` attribute of the **`<set />`** tag. Allowed recursion level in variables is 16.

If the search returns several found objects, only the first one is used.

- **`<mask />`**—user name templates.

Attribute	Description
`add`	String added to a search filter using the AND operation with substitution elements.

Attribute	Description
user	User name mask using the DOS-like meta symbols * and #. Cannot be absent.

For example:

```
<mask user="*@#"  add="sAMAccountName=\1" />

<mask user="*\*"  add="sAMAccountName=\2" />
```

\1 and \2 are the links on matching masks in the user attribute.

- **`<expr />`**—user name templates using regular expressions (attributes are the same as in the **`<mask />`**).

  For example:

```
<expr user="^(.*)@([^.,=@\s\\]+)$"  add="sAMAccountName=\1" />

<expr user="^(.*)\\(.*)"            add="sAMAccountName=\2" />
```

Correspondence between masks and regular expressions:

Mask	Regular expression
*	.*
#	[^.,=@\s\\]+

- **`<filter />`**—LDAP search filter.

Attribute	Description
value	String added to a search filter using the AND operation with substitution elements.

Filters concatenation

```
<set variable="admingrp"  filter="&amp;(objectclass=group)(cn=ESuite Admin)"
attribute="dn" />
<mask user="*\*" add="sAMAccountName=\2" />
<filter value="&amp;(objectClass=user)(memberOf=\admingrp)" />
```

If the admingrp get the "CN=ESuite Admins,OU=some name,DC=example,DC=com"
value after the search, and the user input was domain\user, when the result filter is

```
"(&(sAMAccountName=user)(&(objectClass=user)(memberOf=CN=ESuite
Admins,OU=some name,DC=example,DC=com)))"
```

Example of Configuring LDAP/AD Authentication

Here is an example of typical settings for authentication using LDAP. Settings are configured in the Control Center, in the **Administration → Authentication → LDAP/AD-authentication** section (for the **Advanced settings**).

Initial parameters of administrators who must be authenticated:

- domain: `dc.test.local`
- Active Directory group: `DrWeb_Admins`

Control Center settings:

Setting name		Value
Server type		Microsoft Active Directory
Server address		dc.test.local
Login templates of users to be authenticated	Account mask	test* or *@test.local
	Login	\1
Membership of users to be authenticated	Name	DrWeb_Admins
	Type	group

C4. Depended Permissions Sections

Table C-1. The list of administrative rights and their features

No.	Permission	Description	Control Center section
Manage groups of stations			
1*	**View groups of stations properties**	The list of user groups which administrator sees in the anti-virus network. All system groups are also displayed in the anti-virus network tree, but only stations from the specified group list are available inside.	Anti-virus Network Anti-virus Network → General → Properties
2*	**Edit groups of stations properties**	The list of user groups, properties of which administrator can edit. Must contain groups from the list of permission 1.	
3	**View groups of stations configuration**	The list of user groups, configuration of which is available to view by administrator. Also, administrator is permitted to view configuration of stations, for which the groups from the list are primary. Must contain groups from the list of permission 1.	Anti-virus Network Anti-virus Network → General → Running components Anti-virus Network → General → Quarantine Pages from the **Configuration** section
4	**Edit groups of stations configuration**	Same as permission 3, but editing is permitted. Must contain groups from the list of permission 3.	
5	**View stations properties**	The list of user groups that are primary for stations properties of which administrator is permitted to view. Must contain groups from the list of permission 1.	Anti-virus Network Anti-virus Network → General → Properties
6	**Edit stations properties**	Including ACL, blocking, access, etc. Same as permission 5, but editing is permitted. Must contain groups from the list of permission 5.	

No.	Permission	Description	Control Center section
8*	**Move stations into groups and remove stations from groups**	The list of user groups. Must contain groups from the list of permission 1.	Anti-virus Network
9	**Delete stations**	The list of user groups that are primary for stations which administrator can delete. Must contain groups from the list of permission 1.	
10	**Remote Agent installation and deinstallation**	The list of user groups, for stations of which administrator is permitted to run remote installation of Agents with selected ID. These groups must be a primary for installing stations. Must contain groups from the list of permission 1. Menu item is not displayed if there are forbidden objects. Network installation is available from the /esuite/network/index.ds only in if 16 permission is allowed.	
11	**Merge stations**	The list of user groups stations of which can be merged. These groups must be a primary for stations. The icon to merge stations is available on the toolbar. Must contain groups from the list of permission 1.	
12*	**View statistic tables**	The list of user groups statistics of which can be viewed by administrator. The permission allows to create a task in the Server schedule to receive periodically reports. The ist of user groups which administrator can be specify in the task is set (groups for stations of which the reports will be received). If **Everyone** is set, reports will be received for all groups from the list. Must contain groups from the list of permission 1.	Anti-virus Network pages from the **Statistics** section

No.	Permission	Description	Control Center section
23	**Edit licensing**	The list of user groups for which administrator can add/change/remove a license key. These groups must be a primary for the stations.

Must contain groups from the list of permission 1. | Administration → Administration → License manager |
| **Manage administrators** | | | |
| 25 | **Create administrators, administrative groups** | The corresponding icon in the toolbar is hidden either. | |
| 26 | **Edit administrators accounts** | Administrator from the **Newbies** group sees only a tree of administrators, the root node of which is a group of this administrator, i.e. sees administrators from the own group and its subgroups. Administrator from the **Administrators** group sees all other administrators not depending on their groups.

Administrator can edit administrative accounts from the specified groups. At this, the corresponding icon in the toolbar become available. | |
| 27 | **Delete administrators accounts** | Same as permission 26. | Administration → Configuration → Administrators |
| 28 | **View properties and configuration of administrative groups** | Including administrators in groups and subgroups.

Administrator is able to select only from a subgroup of own parent group. | |
| 29 | **Edit properties and configuration of administrative groups** | Including administrators in groups and subgroups.

Administrator is able to select only from a subgroup of own parent group.

If this permission is denied, even if permission 26 is allowed for this groups, administrator will not be able to disable inheritance or increase permissions to administrator in the group. | |

No.	Permission	Description	Control Center section
Additional			
7	**Create stations**	At station creation, only the list of groups with permission 8 is available (group to which stations are placed, must have the 8 permission). At station creation, one of available user groups must become primary.	Anti-virus Network
13	**View audit**	Audit is available for full-rights administrator and for objects with permission 4.	Administration → Statistics → Audit log
16	**Run Network scanner**	If the permission is denied, the network installation for the /esuite/network/index.ds is not available.	Anti-virus Network Administration → Network scanner
17	**Approve newbies**	The groups list from permission 8 is available. This permission cannot be granted if an administrator is allowed to manage only several groups but not all anti-virus network objects. I.e., for the permission 1 (**View groups of stations properties**) the set of groups is specified.	Anti-virus Network
18	**View Server schedule**	The **Tasks execution log** table viewing. If the 12 and 18 permissions are forbidden, the view of the Server schedule page is forbidden. If the 12 permission is allowed but the 18 is forbidden, when viewing statistics schedule is available. The task for sending reports for respective administrator is displayed depending on the presence of the 12 permission and **Periodic report**, notification even if the 18 permission is forbidden.	Administration → Configuration → Dr.Web Server Task Scheduler Administration → Statistics → Task execution log
19	**Edit Server schedule**		Administration → Configuration → Dr.Web Server Task Scheduler

No.	Permission	Description	Control Center section
20	**View Server configuration and repository configuration**		Administration → Configuration → Web server configuration Administration → Repository → Repository state
21	**Edit Server configuration and repository configuration**		Administration → Repository → Delayed updates Administration → Repository → General repository configuration Administration → Repository → Detailed repository configuration Administration → Repository → Repository content Administration → Logs → Log of repository updates Administration → Configuration → User hooks Administration → Dr.Web Server → Versions list
22	**View license information**		
24	**Edit notifications configuration**		Administration → Notifications → Notifications configuration Administration → Notifications → Unsent notifications Administration → Notifications → Web console notifications
30	**Operation via XML API**		
31	**View neighborhood connections**		
32	**Edit neighborhood connections**		

No.	Permission	Description	Control Center section
33	**Use additional features**	Limits assess to all subsections of **Additional features** section except the **Utilities** subsection which is always available.	Administration → Additional features
34	**Update repository**	Update Server repository from GUS.	The **Update repository** button in the **Repository state** section
39	**View and edit the "Newbies" administrative group**	Allow administrator to view the pre-installed **Newbies** group in the administrators tree and edit its name and description.	Administration → Configuration → Administrators
42	**Edit own settings**	Permission to edit settings of own administrative account	Administration → Configuration → Administrators

* Permissions 1, 2, 8, 12 are defined for station by the list of groups into which it is included but not by a primary group of the station.

If a station is included into the group and for the group some of this permissions are granted, when administrator will have access to the functions corresponding to these permissions not depending on whether the group is primary for the station or not. At this, granting is in priority: if a station is included into both granted and denied groups, administrator will have access to the functions corresponding to the permissions of granted group.

Appendix D. Notification System Settings

> ⓘ Base information on configuration of administrative notifications is given in the **Administrator Manual**, p. Setting Notifications.

D1. Predefined Notifications Description

> ⓘ Variables used at notification templates editing are described in the Application D3.

Notification name	Notification sending reason	Additional information
Administrators		
Administrator authorization failed	Sent on error of administrator authorization in the Control Center. The reason of authorization failure is given in the notification text.	
Unknown administrator	Sent on attempt of authorization in the Control Center by administrator with unknown login.	
Installations		
Installation on station failed	Sent if an error occurred during the Agent installation on a station. The error reason is given in the notification text.	
Installation on station successfully completed	Sent on succeeded Agent installation on a station.	
Licenses		
License key automatically updated	Sent if a license key has been automatically updated. At this, a new key has been successfully downloaded and propagated on all objects of an old license key.	For detailed information on automatic license update, refer the **Administrator Manual**, p. Automatic Licenses Update.
License key blocked	Sent if during the update from Dr.Web Global Update System, information on	To get detailed information on blocking reason, please contact the technical

Notification name	Notification sending reason	Additional information
	the license key blocking has been received. This key can no longer be used.	support service.
License key cannot be automatically updated	Sent if a license key cannot be automatically updated, because the compound of licensed components differs in the current and the new keys. At this, a new key successfully downloaded but not propagated on all objects of an old license key. You must replace the license key manually.	For detailed information on automatic license update, refer the **Administrator Manual**, p. Automatic Licenses Update.
License key expiration	Sent if the Agent key has already expired.	
Licenses donation has expired	Sent if the period of licenses donation to neighbor Servers from the license key of this Server has expired.	The period of licenses donation to neighbor Servers is specified in the **Administration → Dr.Web Server configuration → Licenses** section.
Limitation on a number of licenses is exceeded	Sent if during the Server startup, it was detected that the number of stations in a group already exceeded the number of licenses in the license key assigned to this group.	
Limitation on donated licenses is reached	Sent if the number of requested licenses for donation to a neighbor Servers exceeds the number of licenses that are available in the license key.	
Limitation on online stations is reached	Sent if during connection of a station to the Server, it was detected that the number of stations in the group into which the connected station is included, reached the limitation in the license key assigned for this group.	
Limitation on stations in the group is approaching	Sent if the number of stations in the group is closing to the license limitation in the key assigned to this group.	The number of available licenses left in the key to send the notification is: less than three licenses or less than 5% from the total number of licenses in the key.
Newbies		
Station automatically rejected	Sent if a new station requested a connection to the Server and has been rejected by the Server automatically.	The situation may occur if in the **Administration → Dr.Web Server configuration → General** section, for

Notification name	Notification sending reason	Additional information
		the **Newbies registration mode** option, the **Always deny access** value is set.
Station is waiting for approval	Sent if a new station requested a connection to the Server and administrator must approve or reject the station manually.	The situation may occur if in the **Administration → Dr.Web Server configuration → General** section, for the **Newbies registration mode** option, the **Approve access manually** value is set.
Station rejected by administrator	Sent if a new station requested a connection to the Server and has been rejected by administrator manually.	The situation may occur if in the **Administration → Dr.Web Server configuration → General** section, for the **Newbies registration mode** option, the **Approve access manually** value is set and an administrator selected the **Anti-virus Network →** **Unapproved stations →** **Reject selected stations** option for this station.
Other		
Epidemic in the network	Sent if an epidemic detected in the anti-virus network. It means that during specified time period, it was detected more than specified number of threats in the network.	To sent epidemic notifications, you must set the **Track epidemic** flag in the **Administration → Dr.Web Server configuration → Statistics** section. Parameters on epidemic detection are set in the same section.
Neighbor server has not connected for a long time	Sent according to the task in the Server schedule. Contains information that the neighbor Server has not connected to this Server for a long time. The date of last connection is given in the notification text.	The time period during which the neighbor Server should not get connected to send the notification, is set in the **Neighbor server has not connected for a long time** task of the Server schedule configured in the **Administration → Dr.Web Server Task Schedule**.
Server log rotation error	Sent if an error occurred during rotation of the Server operation log. The reason of log rotation error is given in the notification text.	
Server log write error	Sent when an error occurred during writing an information into the Server operation log. The reason of log write error is given in the notification text.	

Notification name	Notification sending reason	Additional information
Statistic report	Sent after generation of periodic report according to the task in the Server schedule. Also, notification contains the path to download the report file.	The report is generated according to the **Statistic reports** task in the Server schedule configured in the **Administration → Dr.Web Server Task Schedule**.
Summary report of Preventive protection	Sent at receiving a lot of reports from the Preventive protection component on the network stations.	To send a single notification on the Preventive protection report, you must set the **Group reports of Preventive protection** flag in the **Administration → Dr.Web Server configuration → Statistics** section. Parameters on reports grouping are set in the same section.

Repository

Notification name	Notification sending reason	Additional information
Not enough free space on disk	Sent if on a disk where the Server `var` folder located, is running out of space.	Low disk space defined if it is less than 315 MB or less than 1000 nodes (for UNIX system based OS) left, if this values do not redefined by environment variables.
Repository product cannot be updated	Sent if during update of a repository product from the GUS, an error has occurred. The name of the product and the reason of update error are given in the notification text.	
Repository product is up-to-date	Sent if during repository updates check, it was detected that requested product is up-to-date. At this, update of this product from the GUS is not required.	
Repository product is updated	Sent when repository update from the GUS successfully completed.	
Update of repository product is frozen	Sent if the repository product was frozen by administrator. At this, update of this product from the GUS is not performed.	You can manage repository products including their frozen and unfrozen states in the **Administration → Detailed repository configuration** section.
Update of repository product is started	Sent if during repository updates check, it was detected that for requested products an update required. At this, the update from the GUS is launched.	

Notification name	Notification sending reason	Additional information
Stations		
Cannot create the station account	Sent if a new stations account cannot be created on the Server. Error details are given in the Server log file.	
Connection terminated abnormally	Sent on abnormal termination of a connection with a client (station, Agent installer, neighbor Server).	
Critical error of station update	Sent if a notification received from a station reports an error during update of anti-virus components from the Server.	
Device blocked	Sent if a notification received from a station reports that a connected to the station device has been blocked by Dr.Web anti-virus component.	
Report of Preventive protection	Sent at receiving the report from the Preventive protection component from a station of this or neighbor Server.	
Report of Preventive protection on threats detection by known hashes of threats	Sent at receiving the report from the Preventive protection component from a station of this or neighbor Server at threats detection from the list of known hashes of threats.	Notification on detection by the list of known hashes is possible only if the usage of bulletins of known threat hashes is licensed (the license in at least one of the license keys used by the Server is sufficient). You can check the license in the information on a license key that can be found in the **License Manager** section, the **Allowed lists of hash bulletins** parameter (If the feature is not licensed, this parameter is absent).
Scan error	Sent if a notification received from a station reports an error during scanning.	
Scan error at threat detection by known hashes of threats	Sent if scan error occurred at threat detection from the list of known hashes of threats.	Notification on detection by the list of known hashes is possible only if the usage of bulletins of known threat hashes is licensed (the license in at least one of the license keys used by the Server is sufficient).

Notification name	Notification sending reason	Additional information
		You can check the license in the information on a license key that can be found in the **License Manager** section, the **Allowed lists of hash bulletins** parameter (If the feature is not licensed, this parameter is absent).
Scan statistics	Sent if a notification received from a station reports a scan completion. Administrative notification also contains brief scan statistic.	
Security threat detected	Sent if a notification received from a station reports the threats detection. Administrative notification also contains detailed information on detected threats.	
Security threat detected by known hashes of threats	Sent if a notification received from a station reports the threats detection from the list of known hashes of threats. Administrative notification also contains detailed information on detected threats.	Notification on detection by the list of known hashes is possible only if the usage of bulletins of known threat hashes is licensed (the license in at least one of the license keys used by the Server is sufficient). You can check the license in the information on a license key that can be found in the **License Manager** section, the **Allowed lists of hash bulletins** parameter (If the feature is not licensed, this parameter is absent).
Station already logged in	Send on attempt to connect to the Server by a station with identifier which matches the identifier of a station already connected to the Server.	
Station approved by administrator	Sent if a new station requested a connection to the Server and has been approved by administrator manually.	The situation may occur if in the **Administration → Dr.Web Server configuration → General** section, for the **Newbies registration mode** option, the **Approve access manually** value is set and an administrator selected the **Anti-virus Network →** 🟢 **Unapproved stations →** 🖼 **Approve selected stations and set a primary group** option for this station.
Station authorization failed	Sent if a station provided incorrect credentials when trying to connect to	Stations approval policy is set in the **Newbies registration mode** option of

Notification name	Notification sending reason	Additional information
	the Server. Further actions that depend on a stations approval policy, are also given in the notification.	the **Administration → Dr.Web Server configuration → General** section.
Station automatically approved	Sent if a new station requested a connection to the Server and has been approved by the Server automatically.	The situation may occur if in the **Administration → Dr.Web Server configuration → General** section, for the **Newbies registration mode** option, the **Approve access automatically** value is set.
Station has not connected to the Server for a long time	Sent according to the task in the Server schedule. Contains information that the station has not connected to this Server for a long time. The date of last connection is given in the notification text.	The time period during which the station should not get connected to send the notification, is set in the **Station has not connected for a long time** task of the Server schedule configured in the **Administration → Dr.Web Server Task Schedule**.
Station reboot required	Sent if a station reboot is required for one of the following reasons: • to complete the cure • to apply the updates • to change the state of hardware virtualization • to complete the cure and apply the updates • to complete the cure and change the state of hardware virtualization • to apply the updates and change the state of hardware virtualization • to complete the cure, apply the updates and change the state of hardware virtualization.	
Station reboot required to apply updates	Sent if a notification received from a station reports that the product has been installed or updated and the station restart is required.	
Unknown station	Sent if a new station requested a connection to the Server, but was not allowed to review for approval or rejection of the registration.	

D2. The Description of the Notification System Parameters

The system of alerts for events connected with the anti-virus network components operation, the following types of messages sens are used:

- email notifications,
- notifications via the Web Console,
- notifications via SNMP,
- notifications via the Agent protocol,
- Push notifications.

Depending on the notification sens method, the sets of parameters in the key → value format are required. For each method, the following parameters are set:

Table D-1. General parameters

Parameter	Description	Default value	Obligatory
TO	The set of notification receivers divided with the `|` sign		yes
ENABLED	Enable or disable notification send	`true` or `false`	yes
_TIME_TO_LIVE	The number of notification resend attempts in case of fail	10 attempts	no
_TRY_PERIOD	Period in seconds between notification resend attempts	5 min., (send not often than ones in 5 min.)	no

The tables with parameter lists for different notification send types are given below.

Table D-2. Email notifications

Parameter	Description	Default value
FROM	Address of the sender email	drwcsd@${host name}
TO	Address of the receiver email	-
HOST	SMTP server address	127.0.0.1
PORT	SMTP server port number	• 25, if the SSL parameter is `no` • 465, if the SSL parameter is `yes`
USER	SMTP server user	`""`

Parameter	Description	Default value
		is specified, at least one authorization method must be enabled, otherwise the mail will not be sent).
PASS	password of SMTP server user	""
STARTTLS	Encrypt data transfer. At this, switching to secured connection is performed by using the STARTTLS command. The 25 port is used by default for the connection.	yes
SSL	Encrypt data transfer. At this, a new secured TLS connection is established. The 465 port is used by default for the connection.	no
AUTH-CRAM-MD5	use the CRAM-MD5 authentication	no
AUTH-PLAIN	use the PLAIN authentication	no
AUTH-LOGIN	use the LOGIN authentication	no
AUTH-NTLM	use the NTLM authentication	no
SSL-VERIFYCERT	Validate the server SSL certificate	no
DEBUG	Enable debug mode, e.g., to resolve the problem when authorization failed	-

Table D-3. Notifications via Web console

Parameter	Description	Default value
TO	UUID of administrators, to which this notification will be send	-
SHOW_PERIOD	Time to store the message in seconds starting from the moment of receiving	86400 seconds, i.e. one day.

Table D-4. Notifications via SNMP

Parameter	Description	Default value
TO	SNMP receiving entity, e.g., IP address	-

Parameter	Description	Default value
DOMAIN	Domain	• `localhost` for Windows OS, • `""`—for UNIX system-based OS.
COMMUNITY	SNMP community or the context	`public`
RETRIES	The number of notification resend attempts that the API performed	5 attempts
TIMEOUT	Time in seconds after which the API performs the notification resend attempt	5 seconds

Table D-5. Notifications via the Agent protocol

Parameter	Description	Default value
TO	UUID of receiving stations	-
SHOW_PERIOD	Time to store the message in seconds starting from the moment of receiving	86400 seconds, i.e. one day.

Table D-6. Push notifications

Parameter	Description	Default value
TO	Devices tokens which applications are get after registration on the vendor server, e.g. Apple	-
SERVER_URL	URL relay of the server, used to send notification to the vendor server	-

D3. The Parameters of the Notification System Templates

The text for messages is generated by a Server component named the templates processor on the basis of the templates files.

> ⚠️ Windows network message system functions only under Windows OS with Windows Messenger (Net Send) service support.
>
> Windows Vista OS and later do not support Windows Messenger service.

A template file consists of text and variables enclosed in braces. When editing a template file, the variables listed below can be used.

> ⚠ The templates processor does not perform recursive substitutions.

The variables are written as follows:

- `{<VAR>}`—substitute the current value of the *<VAR>* variable.
- `{<VAR>:<N>}`—the first *<N>* characters of the *<VAR>* variable.
- `{<VAR>:<first>:<N>}`—the value of *<N>* characters of the *<VAR>* variable that go after the first *<first>* characters (beginning from the *<first>*+1 symbol), if the remainder is less, it is supplemented by spaces on the right.
- `{<VAR>:<first>:-<N>}`—the value of *<N>* characters of the *<VAR>* variable that go after the first *<first>* characters (beginning from the *<first>*+1 symbol), if the remainder is less, it is supplemented by spaces on the left.
- `{<VAR>/<original1>/<replace1>[/<original2>/<replace2>]}`—replace specified characters of *<VAR>* variable with given characters: *<original1>* characters are replaced with *<replace1>* characters, *<original2>* characters are replaced with *<replace2>* characters, etc.

    The number of substitution pairs are not limited.

- `{<VAR>/<original1>/<replace1[{<SUB_VAR>}]>[/<original2>/<replace2>]}`—similarly to the above described replaces to the specified values but the *<SUB_VAR>* nested variable is used. Actions with nested variables are the same as the actions with parent variables.

    Nesting level for recursive substitutions is not limited.

- `{<VAR>/<original1>/<replace1>/<original2>/<replace2>/*/<replace3>}`—similarly to the above described replaces to the specified values but also the value from *<replace3>* can be substituted, if none of the listed original values match. Also, if either *<original1>*, or *<original2>* have not been found in *<VAR>*, all values will be replaced with the *<replace3>*.

Table D-7. Notation of variables

Variable	Value	Expression	Result
SYS.TIME	10:35:17:456	{SYS.TIME:5}	10:35
SYS.TIME	10:35:17:456	{SYS.TIME:3:5}	35:17
SYS.TIME	10:35:17:456	{SYS.TIME:3:-12}	°°°35:17:456
SYS.TIME	10:35:17:456	{SYS.TIME:3:12}	35:17:456°°°
SYS.TIME	10:35:17:456	{SYS.TIME/10/99/35/77}	99:77:17.456

Conventions

°—whitespace.

Environment Variables

To form messages texts you can use environment variables of the Server process (the **System** user).

Environment variables are available in the Control Center messages editor, in the **ENV** drop-down list. Please note: the variables must be specified with the `ENV.` prefix (the prefix ends with a dot).

System Variables

- `SYS.BRANCH`—system version (Server and Agents),
- `SYS.BUILD`—Server build date,
- `SYS.DATE`—current system date,
- `SYS.DATETIME`—current system date and time,
- `SYS.HOST`—Server DNS name,
- `SYS.MACHINE`—network address of a computer with the Server installed,
- `SYS.OS`—operating system name of a computer with the Server installed,
- `SYS.PLATFORM`—Server platform,
- `SYS.PLATFORM.SHORT`—short variant of `SYS.PLATFORM`,
- `SYS.SERVER`—product name (Dr.Web Server),
- `SYS.TIME`—current system time,
- `SYS.VERSION`—Server version.

Common Variables for Stations

- `GEN.LoginTime`—station login time,
- `GEN.StationAddress`—station address,
- `GEN.StationDescription`—station description,
- `GEN.StationID`—station unique identifier,
- `GEN.StationLDAPDN`—distinguished name of a station under Windows OS. Relevant for stations included into ADS/LDAP domain,
- `GEN.StationMAC`—stations MAC address,
- `GEN.StationName`—station name,
- `GEN.StationPrimaryGroupID`—identifier of the station primary group,
- `GEN.StationPrimaryGroupName`—name of the station primary group,
- `GEN.StationSID`—security identifier of a station.

Common Variables for Repository

- `GEN.CurrentRevision`—current version identifier,
- `GEN.Folder`—product location folder,
- `GEN.NextRevision`—updated version identifier,
- `GEN.Product`—product description.

Variables by Message Types

Administrators

Message	Variables	Description
Administrator authorization failed	`MSG.Login`	login
	`MSG.Address`	Control Center network address
	`MSG.LoginErrorCode`	numeric error code
Unknown administrator	`MSG.Login`	login
	`MSG.Address`	network address of Dr.Web Security Control Center

Installations

For messages of this group, you can also use common variables for stations given above.

Message	Variables	Description
Installation on station failed	`MSG.Error`	error message
Installation on station successfully completed	no variables are available	

Licenses

Message	Variables	Description
License key automatically updated	Sent if a license key has been automatically updated. At this, a new key has been successfully downloaded and propagated on all objects of an old license key.	

Message	Variables	Description
	`MSG.KeyId`	Identifier of an old license key
	`MSG.KeyName`	Name of an old license key
	`MSG.NewKeyId`	Identifier of a new license key
	`MSG.NewKeyName`	Name of a new license key
License key blocked	`MSG.KeyId`	ID of a license key
	`MSG.KeyName`	Name of a user of a license key
License key cannot be automatically updated	Sent if a license key cannot be automatically updated, because the compound of licensed components differs in the current and the new keys. At this, a new key successfully downloaded but not propagated on all objects of an old license key. You must replace the license key manually.	
	`MSG.ExpirationDate`	date of license expiration
	`MSG.Expired`	• 1—the term has expired • 0—the term has not expired
	`MSG.KeyDifference`	The reason why automatic replacement is impossible: • the compound of licensed components differs in the current and the new license keys • the new license key has fewer licenses than the current license key
	`MSG.KeyId`	Identifier of an old license key
	`MSG.KeyName`	Name of an old license key
	`MSG.NewKeyId`	Identifier of a new license key
	`MSG.NewKeyName`	Name of a new license key
License key expiration	Sent if a license key is about to expire and the automatic update of a license is not available.	
	`MSG.ExpirationDate`	date of license expiration
	`MSG.Expired`	• 1—the term has expired • 0—the term has not expired
	`MSG.KeyId`	Identifier of a license key
	`MSG.KeyName`	Name of a license key

Message	Variables	Description
Licenses donation has expired	Sent if the time of licenses donation to the neighbor Server has expired.	
	`MSG.ObjId`	license key ID
	`MSG.Server`	the neighbor Server name
Limitation on a number of licenses is exceeded	Sent when the number of registered stations is approaching the license limit, namely less than 5% of the license limit or less than two stations is unused.	
	`MSG.Licensed`	permitted by license
	`MSG.Used`	number of stations in the base
	`GEN.StationPrimaryGroupName`	primary group name
	`GEN.StationPrimaryGroupID`	primary group ID
Limitation on donated licenses is reached	Sent when trying to donate to the neighbor Server more licenses than the license key has.	
	`MSG.ObjId`	license key ID
Limitation on online stations is reached	Sent when a new station cannot log in on the Server due to the license limitations.	
	`MSG.ID`	station UUID
	`MSG.StationName`	station name
	Common variables for stations given <u>above</u> are also available.	
Limitation on stations in the group is approaching	Sent at every Server launch in case the Server is launched with a key allowing a lesser number of stations than it already has.	
	`MSG.Licensed`	permitted by license
	`MSG.Percent`	the percentage of free licenses
	`MSG.Used`	number of stations in the base
	`GEN.StationPrimaryGroupID`	primary group ID
	`GEN.StationPrimaryGroupName`	primary group name

Newbies

For messages of this group, you can also use common variables for stations given <u>above</u>.

Message	Variables	Description
Station automatically rejected	no variables are available	
Station is waiting for approval		
Station rejected by administrator	`MSG.AdminAddress`	Control Center network address
	`MSG.AdminName`	administrator name

Other

Message	Variables	Description
Epidemic in the network	`MSG.Infected`	total number of detected threats
	`MSG.Virus`	the most common threats
Neighbor Server has not connected for a long time	`MSG.LastDisconnectTime`	the time when the Server has been connected at the last time
	`MSG.StationName`	the neighbor Server name
Server log rotation error	`MSG.Error`	message text
Server log write error	`MSG.Error`	message text
Statistic report	`MSG.Attachment`	path to the report
	`MSG.AttachmentType`	MIME type
	`GEN.File`	report file name
Summary report of Preventive protection	`MSG.AutoBlockedActCount`	number of processes with suspicious activity that were blocked automatically
	`MSG.AutoBlockedProc`	processes with suspicious activity that were blocked automatically
	`MSG.HipsType`	type of protected object
	`MSG.IsShellGuard`	dividing on types of the Preventive protection reactions at automatic blocking: • blocking of unauthorized code • check the access to the protected objects

Message	Variables	Description
	`MSG.ShellGuardType`	the most common reason of a blocking of unauthorized code execution at automatic event blocking
	`MSG.Total`	total number of Preventive protection events detected on the network
	`MSG.UserAllowedActCount`	number of processes with suspicious activity that were allowed by user
	`MSG.UserAllowedHipsType`	type of the most common protected objects access to which was allowed by user
	`MSG.UserAllowedIsShellGuard`	dividing on types of the Preventive protection reactions when the access was allowed by user: • blocking of unauthorized code • check the access to the protected objects
	`MSG.UserAllowedProc`	processes with suspicious activity that were allowed by user
	`MSG.UserAllowedShellGuard`	the most common reason of a blocking of unauthorized code execution which was allowed by user
	`MSG.UserBlockedActCount`	number of processes with suspicious activity that were blocked by user
	`MSG.UserBlockedHipsType`	type of the most common protected objects access to which was blocked by user
	`MSG.UserBlockedIsShellGuard`	dividing on types of the Preventive protection reactions when the access was blocked by user: • blocking of unauthorized code • check the access to the protected objects
	`MSG.UserBlockedProc`	processes with suspicious activity that were blocked by user
	`MSG.UserBlockedShellGuard`	the most common reason of a blocking of unauthorized code execution which was blocked by user

Repository

For messages of this group, you can also use common variables for repository given <u>above</u>.

Message	Variables	Description
Not enough free space on disk	Sent when it is not enough free space on disk with variable data. Common variables for repository given <u>above</u> are not available.	
	`MSG.FreeInodes`	the number of free inodes file descriptors (has the meaning only for some UNIX system-based OS)
	`MSG.FreeSpace`	free space in bytes
	`MSG.Path`	the path to the folder with low free space
	`MSG.RequiredInodes`	number of free inodes required for operation (has the meaning only for some UNIX system-based OS)
	`MSG.RequiredSpace`	free space required for operation
Repository product cannot be updated	`MSG.Error`	error message
	`MSG.ExtendedError`	detailed description of an error
Repository product is up-to-date	no variables are available	
Repository product is updated	`MSG.Added`	list of added files (each name in a separate line)
	`MSG.AddedCount`	number of added files
	`MSG.Deleted`	list of deleted files (each name in a separate line)
	`MSG.DeletedCount`	number of deleted files
	`MSG.Replaced`	list of replaced files (each name in a separate line)
	`MSG.ReplacedCount`	number of replaced files
Update of repository product is frozen	no variables are available	
Update of repository product is started		

> ⓘ The variables of the **Repository product is up-to-date** template do not include the files marked as **not to be notified of** in the product configuration file, read F1. The Syntax of the Configuration File .config.

Stations

For messages of this group, you can also use common variables for stations given above.

> ⓘ In multiserver network, it is possible to receive notifications about events on stations of neighbor Servers. You can enable this option when configuring neighbor Server connections (see **Administrator Manual**, the Setting Connections between Several Dr.Web Servers section).
>
> The following notifications are available to receive on event on the neighbor Server: **Security threat detected**, **Report of Preventive protection**, **Scan error**, **Scan statistics**.

Message	Variables	Description
Cannot create the station account	`MSG.ID`	station UUID
	`MSG.StationName`	station name
Connection terminated abnormally	`MSG.Reason`	reason for the termination
	`MSG.Type`	client type
Critical error of station update	`MSG.Product`	updated product
	`MSG.ServerTime`	local time of receipt of a message by the Server
Device blocked	`MSG.Capabilities`	device characteristics
	`MSG.Class`	device class (the name of a parent group)
	`MSG.Description`	device description
	`MSG.FriendlyName`	user friendly name of the device
	`MSG.InstanceId`	identifier of a device instance
	`MSG.User`	user name
Report of Preventive protection	`MSG.AdminName`	administrator who initiated the action on a suspicious process
	`MSG.Denied`	action on a suspicious process:

Message	Variables	Description
		• denied • allowed
	`MSG.HipsType`	protected object type
	`MSG.IsShellGuard`	dividing on types of the Preventive protection reactions: • blocking of unauthorized code • check the access to the protected objects
	`MSG.Path`	path to the process with suspicious activity
	`MSG.Pid`	identifier of the process with suspicious activity
	`MSG.ShellGuardType`	reason of execution of unauthorized code blocking
	`MSG.StationTime`	time of event occurrence on a station
	`MSG.Target`	path to the protected object to which the access attempt was made
	`MSG.Total`	number of denials in case of automatic reaction of the Preventive protection
	`MSG.User`	user who launched the suspicious process
	`MSG.UserAction`	initiator of the action on a suspicious process • user • automatic reaction of the Preventive protection
	`GEN.ServerRecvLinkID`	UUID of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	`GEN.ServerRecvLinkName`	the name of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)

Message	Variables	Description
	GEN.ServerOriginatorID	UUID of the Server to which the station is connected from which the Preventive protection report was received
	GEN.ServerOriginatorName	the name of the Server to which the station is connected from which the Preventive protection report was received
Report of Preventive protection on threats detection by known hashes of threats	MSG.AdminName	administrator who initiated the action on a suspicious process
	MSG.Denied	action on a suspicious process: • denied • allowed
	MSG.Document	bulletin containing the hash of detected threat
	MSG.HipsType	protected object type
	MSG.IsShellGuard	dividing on types of the Preventive protection reactions: • blocking of unauthorized code • check the access to the protected objects
	MSG.Path	path to the process with suspicious activity
	MSG.Pid	identifier of the process with suspicious activity
	MSG.SHA1	SHA-1 hash of detected object
	MSG.SHA256	SHA-256 hash of detected object
	MSG.ShellGuardType	reason of execution of unauthorized code blocking
	MSG.StationTime	time of event occurrence on a station
	MSG.Target	path to the protected object to which the access attempt was made
	MSG.Total	number of denials in case of automatic reaction of the Preventive protection

Message	Variables	Description
	`MSG.User`	user who launched the suspicious process
	`MSG.UserAction`	initiator of the action on a suspicious process • user • automatic reaction of the Preventive protection
	`GEN.ServerRecvLinkID`	UUID of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	`GEN.ServerRecvLinkName`	the name of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	`GEN.ServerOriginatorID`	UUID of the Server to which the station is connected from which the Preventive protection report was received
	`GEN.ServerOriginatorName`	the name of the Server to which the station is connected from which the Preventive protection report was received
Scan error	`MSG.Component`	component name
	`MSG.Error`	error message
	`MSG.ObjectName`	object name
	`MSG.ObjectOwner`	object owner
	`MSG.RunBy`	component is launched by this user
	`MSG.ServerTime`	event receipt time, GMT
	`GEN.ServerRecvLinkID`	UUID of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)

Message	Variables	Description
	GEN.ServerRecvLinkName	the name of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	GEN.ServerOriginatorID	UUID of the Server to which the station is connected from which the Preventive protection report was received
	GEN.ServerOriginatorName	the name of the Server to which the station is connected from which the Preventive protection report was received
Scan error at threat detection by known hashes of threats	MSG.Component	component name
	MSG.Document	bulletin containing the hash of detected threat
	MSG.Error	error message
	MSG.ObjectName	object name
	MSG.ObjectOwner	object owner
	MSG.RunBy	component is launched by this user
	MSG.SHA1	SHA-1 hash of detected object
	MSG.SHA256	SHA-256 hash of detected object
	MSG.ServerTime	event receipt time, GMT
	GEN.ServerRecvLinkID	UUID of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	GEN.ServerRecvLinkName	the name of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	GEN.ServerOriginatorID	UUID of the Server to which the station is connected from which the Preventive protection report was received

Message	Variables	Description
	GEN.ServerOriginatorName	the name of the Server to which the station is connected from which the Preventive protection report was received
Scan statistics	MSG.Component	component name
	MSG.Cured	number of cured objects
	MSG.DeletedObjs	number of deleted objects
	MSG.Errors	number of scan errors
	MSG.Infected	number of infected objects
	MSG.Locked	number of blocked objects
	MSG.Modifications	number of objects infected with known modifications of viruses
	MSG.Moved	number of moved objects
	MSG.Renamed	number of renamed objects
	MSG.RunBy	component is launched by this user
	MSG.Scanned	number of scanned objects
	MSG.ServerTime	event receipt time, GMT
	MSG.Speed	processing speed in KB/s
	MSG.Suspicious	number of suspicious objects
	MSG.VirusActivity	
	GEN.ServerRecvLinkID	UUID of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	GEN.ServerRecvLinkName	the name of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	GEN.ServerOriginatorID	UUID of the Server to which the station is connected from which the Preventive

Message	Variables	Description
		protection report was received
	GEN.ServerOriginatorName	the name of the Server to which the station is connected from which the Preventive protection report was received
Security threat detected	MSG.Action	action upon a detection
	MSG.Component	component name
	MSG.InfectionType	threat type
	MSG.ObjectName	infected object name
	MSG.ObjectOwner	infected object owner
	MSG.RunBy	component is launched by this user
	MSG.ServerTime	event receipt time, GMT
	MSG.Virus	threat name
	GEN.ServerRecvLinkID	UUID of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	GEN.ServerRecvLinkName	the name of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	GEN.ServerOriginatorID	UUID of the Server to which the station is connected from which the Preventive protection report was received
	GEN.ServerOriginatorName	the name of the Server to which the station is connected from which the Preventive protection report was received
Security threat detected by known hashes of threats	MSG.Action	action upon a detection
	MSG.Component	component name
	MSG.Document	bulletin containing the hash of detected threat

Message	Variables	Description
	`MSG.InfectionType`	threat type
	`MSG.ObjectName`	infected object name
	`MSG.ObjectOwner`	infected object owner
	`MSG.RunBy`	component is launched by this user
	`MSG.SHA1`	SHA-1 hash of detected object
	`MSG.SHA256`	SHA-256 hash of detected object
	`MSG.ServerTime`	event receipt time, GMT
	`MSG.Virus`	threat name
	`GEN.ServerRecvLinkID`	UUID of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	`GEN.ServerRecvLinkName`	the name of the last neighbor Server from which the Preventive protection report on connected stations was received (empty value if the report was received about stations connected to this Server)
	`GEN.ServerOriginatorID`	UUID of the Server to which the station is connected from which the Preventive protection report was received
	`GEN.ServerOriginatorName`	the name of the Server to which the station is connected from which the Preventive protection report was received
Station already logged in	Sent if the station is currently registered at this or another Server.	
	`MSG.ID`	station UUID
	`MSG.Server`	ID of the Server at which the station is registered
	`MSG.StationName`	name of the station
Station approved by administrator	`MSG.AdminAddress`	network address of the Control Center
	`MSG.AdminName`	administrator name

Message	Variables	Description
Station authorization failed	`MSG.ID`	station UUID
	`MSG.Rejected`	values: • `rejected`—access to a station is denied • `newbie`—there was an attempt to assign the "newbie" status to a station
	`MSG.StationName`	station name
Station automatically approved	no variables are available	
Station has not connected to the Server for a long time	Common variables for stations given above are not available.	
	`MSG.DaysAgo`	number of days since the last connection to the Server
	`MSG.LastSeenFrom`	address of the station at the last connection to the Server
	`MSG.StationDescription`	station description
	`MSG.StationID`	station UUID
	`MSG.StationMAC`	station MAC address
	`MSG.StationName`	station name
	`MSG.StationSID`	station security identifier
Station reboot required	`MSG.Reason`	reboot reason the list of possible reboot reasons is given in the predefined template
Station reboot required to apply updates	`MSG.Product`	updated product
	`MSG.ServerTime`	local time of receipt of a message by the Server
Unknown station	`MSG.ID`	UUID of unknown station
	`MSG.Rejected`	values: • `rejected`—access for a station is denied • `newbie`—there was an attempt to assign the "newbie" status to a station

Message	Variables	Description
	MSG.StationName	station name

Appendix E. The Specification of Network Addresses

In the specification the following conventions are taken:

- variables (the fields to be substituted by concrete values) are enclosed in angle brackets and written in italic,
- permanent text (remains after substitutions) is written in bold,
- optional elements are enclosed in brackets,
- the defined notion is placed on the left of the `::=` character string, and the definition is placed on the right (as in the Backus-Naur form).

E1. The General Format of Address

The network address looks as follows:

`[<protocol>://][<protocol-specific-part>]`

By default, *<protocol>* has the TCP value. The default values of *<protocol-specific-part>* are determined by the application.

> The following obsolete addresses format is also allowed:
>
> `[<protocol>/][<protocol-specific-part>]`.

IP Addresses

- *<interface>*`::=`*<ip-address>*

  <ip-address> can be either a DNS name or an IP address separated by periods (for example, `127.0.0.1`).

- *<socket-address>*`::=`*<interface>*`:`*<port-number>*

  <port-number> must be specified by a decimal number.

When you specify an address of the Server or the Agent, you can set the version of the protocol to use. The following variants are available:

- *<protocol>*`://`*<interface>*`:`*<port-number>* – use IPv4 and IPv6.
- *<protocol>*`://(`*<interface>*`):`*<port-number>* – use IPv4 only.
- *<protocol>*`://[`*<interface>*`]:`*<port-number>* – use IPv6 only.

Examples:

1. `tcp://127.0.0.1:2193`

   means a TCP protocol, port `2193` on an interface `127.0.0.1`.
2. `tcp://(examle.com):2193`

means a TCP protocol, port `2193` on an IPv4 interface `examle.com`.

3. `tcp://[::]:2193`

   means a TCP protocol, port `2193` on an IPv6 interface
   `0000.0000.0000.0000.0000.0000.0000.0000`

4. `localhost:2193`

   the same.

5. `tcp://:9999`

   value for the server: the default interface depending on the application (usually all available interfaces), port `9999`; value for client: the default connection to the host depending on the application (usually `localhost`), port `9999`.

6. `tcp://`

   TCP protocol, default port.

Connection-Oriented Protocol

<protocol>/*<socket-address>*

where *<socket-address>* sets the local address of the socket for a server or a remote server for a client.

Datagram-Oriented Protocol

<protocol>`://`*<endpoint-socket-address>*[`-`*<interface>*]

Examples:

1. `udp://231.0.0.1:2193`

   means using a multicast group `231.0.0.1:2193` on an interface depending on the application by default.

2. `udp://[ff18::231.0.0.1]:2193`

   means using a multicast group `[ff18::231.0.0.1]` on an interface depending on the application by default.

3. `udp://`

   application-dependent interface and endpoint.

4. `udp://255.255.255.255:9999-myhost1`

   using broadcasting messages on port `9999` on `myhost1` interface.

UDS Addresses

- Connection-oriented protocol:

   `unx://`*<file_name>*

- Datagram-oriented protocol:

   `udx://`*<file_name>*

Examples:

```
1. unx://tmp/drwcsd:stream
2. unx://tmp/drwcsd:datagram
```

SRV Addresses

`srv://[`*`<server name>`*`][@`*`<domain name/dot address>`*`]`

E2. The Addresses of Dr.Web Agent/ Installer

Direct Connection to Dr.Web Server

`[`*`<connection-protocol>`*`]://[`*`<remote-socket-address>`*`]`

By default, depending on *<connection-protocol>*:

- `tcp://127.0.0.1:2193`

  means loopback port `2193`,

- `tcp://[::]:2193`

  means loopback port `2193` for IPv6.

<drwcs-name> Dr.Web Server Location Using the Given Family of Protocols and Endpoint

`[`*`<drwcs-name>`*`]@`*`<datagram-protocol>`*`://[`*`<endpoint-socket-address>`*`[-`*`<interface>`*`]]`

By default, depending on *<datagram-protocol>*:

- `drwcs@udp://231.0.0.1:2193-0.0.0.0`

  location of a Server with the `drwcs` name for a TCP connection using a multicast group `231.0.0.1:2193` for all interfaces.

Appendix F. Administration of the Repository

> (!) It is recommended to manage repository via the corresponding settings of the Control Center. For more details, see **Administrator Manual**, p. Administration of Dr.Web Server Repository.

Repository settings are saved to the following repository configuration files:

- General configuration files reside in the root folder of the repository and specify parameters of update servers.

- Products configuration files reside in the root folders that correspond to concrete repository products and specify the files set and update settings for the product in the folder of which they are located.

> (!) After the configuration files have been edited, restart the Server.

> ⚠ When setting up interserver links for product mirroring (see **Administrator Manual**, p. Peculiarities of a Network with Several Dr.Web Servers), please remember that configuration files are not the part of the product and therefore are not properly handled by the mirror system. To avoid errors during the updating
>
> - for peer Servers, use identical configuration,
> - for subordinate Servers, disable synchronizing of components through HTTP protocol or keep the configuration identical.

F1. General configuration files

.servers

The `.servers` file contains the list of servers for updating the components of Dr.Web Enterprise Security Suite in Dr.Web Server repository from the GUS servers.

The servers in the list are polled consequently, once the updating is successful, the polling procedure terminates.

For Example:

```
esuite.geo.drweb.com

esuite.msk3.drweb.com

esuite.msk4.drweb.com
```

```
esuite.msk.drweb.com

esuite.us.drweb.com

esuite.jp.drweb.com
```

.url

The `.url` file contains the base URI of updates zone—the folder on updates servers that contains updates of concrete Dr.Web product.

For Example:

```
update
```

.proto

The `.proto` file contains the name of the protocol which is used to receive updates from the updates servers.

May take one of the following values: `http | https | ftp | ftps | sftp | scp | smb | smbs | file`.

> ⚠️ The `smb` and `smbs` protocols are available only for Servers under UNIX system-based OS.

For Example:

```
https
```

.auth

The `.auth` file contains parameters of user authorisation on the update server.

Authorization parameters are specified in the following format:

```
<user name>

<password>
```

User name is mandatory, password is optional.

For Example:

```
admin

root
```

.delivery

The `.delivery` file contains settings for transferring updates from the GUS servers.

Parameter	Possible values	Description
cdn	on | off	Using Content Delivery Network during repository loading: • `on`—use CDN, • `off`—do not use CDN.
cert	drweb | valid | any | custom	Allowed SSL certificates of update servers that will be automatically accepted: • `drweb`—accept only SSL certificate of Doctor Web company, • `valid`—accept only valid SSL certificates, • `any`—accept any certificates, • `custom`—accept certificate defined by user.
cert-path		Path to the user-defined if the `custom` mode of the `cert` parameter is set.
ssh-mode	pwd | pubkey	Authorization mode when using `scp` and `sftp` protocols (based on *ssh2*): • `pwd`—authorization by user login and password, • `pubkey`—authorization by encryption keys.
ssh-pubkey		Path to the public ssh key of update server.
ssh-prikey		Path to the private ssh key of update server.

F2. Products configuration files

.description

The `.description` file sets a product name. If the file is absent, the name of the respective folder of the product is used as the product name.

For Example:

```
Dr.Web Server
```

.sync-off

The file disables the product update. Content is irrelevant.

Files of Exclusions in Updating the Server Repository from the GUS

.sync-only

The `.sync-only` file contains the regular expressions that define the list of repository files which will be synchronized during update of the repository from the GUS. Repository files not specified in the `.sync-only`, will not be synchronized. If the `.sync-only` file is absent, all repository files will be synchronized except those files which are excepted according to the settings in the `.sync-ignore` file.

.sync-ignore

The `.sync-ignore` file contains the regular expressions that define the list of repository files which will be excluded from synchronization during update of the repository from the GUS.

Example of the file with exceptions:

```
^windows-nt-x64/

^windows-nt/

^windows/
```

The Order of Use of Configuration Files

If the `.sync-only` and `.sync-ignore` files are present for the product, the following scheme of actions is used:

1. The `.sync-only` is applied first. Files not listed in the `.sync-only`, are not handled.
2. To the rest of files, the `.sync-ignore` is applied.

Files of Exclusions in Updating the Agents from the Server

.state-only

The `.state-only` file contains the regular expressions that define the list of repository files which will be synchronized during update of the Agents from the Server. Repository files not specified in the `.state-only`, will not be synchronized. If the `.state-only` file is absent, all repository files will be synchronized except those files which are excepted according to the settings in the `.state-ignore` file.

.state-ignore

The `.state-ignore` file contains the regular expressions that define the list of repository files which will be excluded from synchronization during update of the Agents from the Server.

For Example:

- German, Chinese and Spanish interface languages should not be received (others—will be received),
- no components designed for Windows OS 64-bit should be received.

```
;^common/ru-.*\.dwl$ this will be updated

^common/de-.*\.dwl$

^common/cn-.*\.dwl$

^common/es-.*\.dwl$

^win/de-.*

^win/cn-.*

^windows-nt-x64\.*
```

The order of using `.state-only` and `.state-ignore` is the same as for the `.sync-only` and `.sync-ignore`.

Notification Sending Configuration

The files of the `notify` group allow to configure the notification system on successful update of the separate products.

⚠ These settings are refer the **Product has been updated** notification only. To all other notification types, exceptions are not applied.

> The setting of the notification system is described in **Administrator Manual**, p. <u>Setting Notifications</u>.

.notify-only

The `.notify-only` file contains the list of repository files on changing of which the notification will be sent.

.notify-ignore

The `.notify-ignore` file contains the list of repository files on changing of which the notification will not be sent.

The Order of Use of Configuration Files

If the `.notify-only` and `.notify-ignore` files are present for the product, the following scheme of actions is used:

1. At product update, files updates from the GUS, are compared with exclusions list.
2. Files included into the `.notify-ignore` list, are excluded first.
3. From the rest of files, whose are excluded which are not in the `.notify-only` list.
4. If files not excluded on the previous steps are remained, notifications will be sent.

If the `.notify-only` and `.notify-ignore` files are absent, notifications will be always sent (if they are enabled on the **Notifications configuration** page in the Control Center).

For Example:

If in the `.notify-ignore` file, the `^.vdb.lzma$` exception is set, and only virus databases are updated, notification will not be sent. If the `drweb32.dll` engine is updated with the databases, when notification will be sent.

Freeze Settings

.delay-config

The `.delay-config` file contains settings to disable switching the product to the new revision. Repository continues distributing the previous revision, and synchronization is no longer performed (the state of the product become "frozen"). If administrator decides that received revision is adequate for distributing, administrator must enable its distribution in the Control Center (see **Administrator Manual**, p. <u>Administration of Dr.Web Server Repository</u>).

The file contains two not case sensitive parameters which are separated by a semicolon.

File format:

```
Delay [ON|OFF]; UseFilter [YES|NO]
```

Parameter	Possible values	Description
Delay	ON|OFF	• ON—freeze of product updates is enabled. • OFF—freeze of product updates is disabled.
UseFilter	YES|NO	• Yes—freeze updates only if updates files match the exceptions list in the .delay-only file. • No—freeze updates in any case.

For Example:

```
Delay ON; UseFilter NO
```

.delay-only

The .delay-only file contains the list of files, changing of which disables the switching the product on a new revision. The list of files is set in a regular expressions format.

If the file from the repository update meets the specified masks and the UseFilter setting in the .sync-only file if enabled, when revision will be frozen.

.rev-to-keep

The .rev-to-keep file contains the number of stored product revisions.

For Example:

```
3
```

Appendix G. Configuration Files Format

This section describes the format of the following files:

File	Descriotion
drwcsd.conf	Dr.Web Server configuration file
webmin.conf	Dr.Web Security Control Center configuration file
download.conf	Configuration file to set up downloaded from the Server data
drwcsd-proxy.conf	Dr.Web Proxy server configuration file
drwreploader.conf	Repository loader configuration file

> ⚠ If on the computer with corresponding component, the Agent with enabled self-protection is installed, before editing configuration files, disable Dr.Web Self-protection component via the Agent settings.
>
> After you save all changes, it is recommended to enable Dr.Web Self-protection component.

G1. Dr.Web Server Configuration File

The `drwcsd.conf` Server configuration file resides by default in the `etc` subfolder of the Server installation folder. If the Server is run with a command line parameter, a non-standard location and name of the configuration file can be set (for more read Appendix H4. Dr.Web Server).

To manage Dr.Web Server configuration file manually, do the following:

1. Stop the Server (see **Administrator Manual**, p. Start and Stop Dr.Web Server).
2. Disable self-protection (in case of installed Agent with the active self-protection—in the Agent context menu).
3. Manage the Server configuration file.
4. Start the Server (see **Administrator Manual**, p. Start and Stop Dr.Web Server).

Dr.Web Server Configuration File Format

Server configuration file is in XML format.

Description of Dr.Web Server configuration file parameters:

`<`**`version`** `value=''>`

Current version of the configuration file.

- `<`**`name`** `value=''/>`

  The name of Dr.Web Server or a cluster of Dr.Web Servers, which is used during the search by Agent, Agent installers and Control Center. Leave the value blank ('' is used by default), to use the name of the computer where Dr.Web Server software is installed.

- `<`**`id`** `value=''/>`

  The Server unique identifier. In the previous versions was placed in the Server license key. Starting from version 10, is stored in the Server configuration file.

- `<`**`location`** `city='' country='' department='' floor='' latitude='' longitude='' organization='' province='' room='' street=''/>`

  The Server geographic location.

  Attributes description:

Attribute	Description
city	City
country	Country
department	Department name
floor	Floor
latitude	Latitude
longitude	Longitude
organization	Organization name
province	Province name
room	Room number
street	Street name

- `<`**`threads`** `count=''/>`

  The threads number processing data from the Agents. Minimal value is 5. Default is 5. This parameter affects Server performance. Change the default setting on advice of the technical support only.

- `<`**`newbie`** `approve-to-group='' default-rate='' mode=''/>`

  Access mode for new stations.

  Attributes description:

Attribute	Allowed values	Description	Default
`approve-to-group`	-	The group which is set as a primary by default for new stations for the **Allow access automatically** mode (`mode='open'`).	Empty value, which means assign the **Everyone** group as a primary.
`default-rate`	-	For AV-Desk. The group which is set as a tariff by default for new stations for the **Allow access automatically** mode (`mode='open'`).	Empty value, which means assign the **Dr.Web Premium** group as a tariff.
`mode`	• open—allow access automatically, • closed—always deny access, • approval—approve access manually.	New stations approval policy.	-

For more details see **Administrator Manual**, p. New Stations Approval Policy.

- `<unauthorized-to-newbie enabled=''/>`

  Policy of actions on unauthorized stations. Allowed values of `enabled`:

    ▫ `yes`—stations authorisation of which is failed (e.g., if the database is corrupted), will be automatically reset to newbies,

    ▫ `no` (default)—normal operation mode.

- `<maximum-authorization-queue size=''/>`

  Maximal number of stations in the queue for authorization on the Server. Change the default setting on advice of the technical support only.

- `<reverse-resolve enabled=''/>`

  Replace IP address with DNS names in Dr.Web Server log file. Allowed values of `enabled`:

    ▫ `yes`—show DNS names.

    ▫ `no` (Default)—show IP addresses.

- `<replace-netbios-names enabled=''/>`

  Replace NetBIOS names of computers with DNS names. Allowed values of `enabled`:

    ▫ `yes`—show DNS names.

    ▫ `no` (Default)—show NetBIOS names.

- `<dns>`

  DNS settings.

  `<timeout value=''/>`

Timeout in seconds for resolving DNS direct/reverse queries. Leave the value blank to disable restriction on wait time until the end of the resolution

`<retry value=''/>`

Maximum number of repeated DNS queries on fail while resolving the DNS query.

`<cache enabled='' negative-ttl='' positive-ttl=''/>`

Time for storing responses from DNS server in the cache.

Attributes description:

Attribute	Allowed values	Description
enabled	• yes—store responses in the cache, • no—do not store responses in the cache.	Mode of storing responses in the cache.
negative-ttl	-	Storage time in the cache (TTL) of negative responses from the DNS server in minutes.
positive-ttl	-	Storage time in the cache (TTL) of positive responses from the DNS server in minutes.

`<servers>`

List of DNS servers, which replaces default system list. Contains one or several `<server address=""/>` child elements, the `address` parameter of which defines IP address of the server.

`<domains>`

List of DNS domains, which replaces default system list. Contains one or several `<domain name="">` child elements, the `name` parameter of which defines the domain name.

- `<cache>`

  Caching settings.

  The `<cache />` element contains the following child elements:

  ▫ `<interval value=''/>`

  Period of full cache flush in seconds.

  ▫ `<quarantine ttl=''/>`

  Cleanup interval of Server quarantined files in seconds. Default is `604800` (one week).

  ▫ `<download ttl=''/>`

  Cleanup interval of personal installation packages. Default is `604800` (one week).

  ▫ `<repository ttl=''/>`

  Cleanup interval of files in the Server repository in seconds.

  ▫ `<file ttl=''/>`

  Cleanup interval of file cache in seconds. Default is `604800` (one week).

- `<replace-station-description enabled=''/>`

Synchronize stations descriptions on Dr.Web Server with the **Computer description** field at the **System properties** page on the station. Allowed values of `enabled`:

- `yes`—replace description on the Server with description on the station.
- `no` (default)—ignore description on station.

- `<time-discrepancy value=''/>`

Allowed difference between system time at Dr.Web Server and Dr.Web Agents in minutes. If the difference is larger than specified value, it will be noted in the status of the station at Dr.Web Server. 3 minutes are allowed by default. The empty value or the 0 value means that checking is disabled.

- `<encryption mode=''/>`

Traffic encryption mode. Allowed values of `mode`:

- `yes`—use encryption,
- `no`—do not use encryption,
- `possible`—encryption is allowed.

Default is `yes`.

For more details see **Administrator Manual**, p. Traffic Encryption and Compression.

- `<compression level='' mode=''/>`

Traffic compression mode.

Attributes description:

Attribute	Allowed values	Description
`level`	Integer from 1 to 9.	Compression level.
`mode`	• `yes`—use compression, • `no`—do not use compression, • `possible`—compression is allowed.	Compression mode.

For more details see **Administrator Manual**, p. Traffic Encryption and Compression.

- `<track-agent-jobs enabled=''/>`

Allow monitoring ans storing into the Server database the results of tasks execution on workstations. Allowed values of `enabled`: `yes` or `no`.

- `<track-agent-status enabled=''/>`

Allow monitoring of changes in the stations state ans storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- `<track-virus-bases enabled=''/>`

Allow monitoring of changes in the state (compound, changes) of virus bases on stations and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`. Parameter is ignored for `<track-agent-status enabled='no'/>`.

- `<track-agent-modules enabled=''/>`

Allow monitoring of modules versions on stations and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- `<track-agent-components enabled=''/>`

Allow monitoring of the list of installed components on stations and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- `<track-agent-userlogon enabled=''/>`

Allow monitoring of user sessions on stations and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- `<track-agent-environment enabled=''/>`

Allow monitoring of compound of hardware and software on stations and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- `<keep-run-information enabled=''/>`

Allow monitoring of information on start and stop of anti-virus components operating on stations and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- `<keep-infection enabled=''/>`

Allow monitoring of threats detection on stations and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- `<keep-scan-errors enabled=''/>`

Allow monitoring of scan errors on stations and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- `<keep-scan-statistics enabled=''/>`

Allow monitoring of scan statistics on stations and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- `<keep-installation enabled=''/>`

Allow monitoring of information on Agent installations on stations and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- `<quarantine enabled=''/>`

Allow monitoring of information on the Quarantine state on stations and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- `<update-bandwidth queue-size='' value=''/>`

Maximal network traffic bandwidth in KB/sec. for transmitting updates from Server to Agents.

Attributes description:

Attribute	Allowed values	Description	Default
`queue-size`	• positive integer, • `unlimited`.	Maximum allowable number of updates distribution sessions running at the same time from the Server. When the limit is reached, the Agent requests are placed into the waiting queue. The waiting queue size is unlimited.	`unlimited`

Attribute	Allowed values	Description	Default
value	• maximal speed in KB/sec, • unlimited.	Maximal summary speed for updates transmission.	unlimited

- **`<install-bandwidth`** `queue-size='' value=''/>`

Maximal network traffic bandwidth in KB/sec. for transmitting data during Dr.Web Agent installation on stations.

Attributes description:

Attribute	Allowed values	Description	Default
queue-size	• positive integer, • unlimited.	Maximum allowable number of the Agent installation sessions running at the same time from the Server. When the limit is reached, the Agent requests are placed into the waiting queue. The waiting queue size is unlimited.	unlimited
value	• maximal speed in KB/sec, • unlimited.	Maximal summary speed for transmitting data during Agent installations.	unlimited

- **`<geolocation`** `enabled='' startup-sync=''/>`

Enable synchronization of stations geolocation between Dr.Web Servers.

Attributes description:

Attribute	Allowed values	Description
enabled	• yes—allow synchronization, • no—disable synchronization.	Synchronization mode.
startup-sync	Positive integer.	Number of stations without geographical coordinates, information on which is requested when establishing a connection between Dr.Web Servers.

- **`<audit`** `enabled=''/>`

Allow monitoring of administrator operations in Dr.Web Security Control Center and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- **`<audit-internals`** `enabled=''/>`

Allow monitoring of internal operations in Dr.Web Server and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- **`<audit-xml-api`** `enabled=''/>`

Allow monitoring of operations via Web API in Dr.Web Server and storing the information into the Server database. Allowed values of `enabled`: `yes` or `no`.

- **`<proxy`** `auth-list='any' enabled='no' host='' password='' user=''/>`

Parameters of connections to Dr.Web Server via HTTP proxy server.

Attributes description:

Attribute	Allowed values	Description
`auth-list`	`none`—do not use authorization, `any`—any supported method, `safe`—any safe supported method, - the following methods, if several, set all necessary methods separated by a space: `basic` `digest` `ntlm` `negotiate`	Proxy server authorization type. Default is 'any'.
`enabled`	`yes`—use proxy server, `no`—do not use proxy server.	Mode of connections to Dr.Web Server via HTTP proxy server.
`host`	-	Proxy server address.
`password`	-	Password of proxy server user if proxy server requires authorization.
`user`	-	Name of proxy server user if proxy server requires authorization.

> When setting the list of allowed authorization methods for a proxy server, you can use the `only` mark (add it to the end of the list with a space) to change the algorithm of authorization method selecting.
>
> For more details, see https://curl.haxx.se/libcurl/c/CURLOPT_HTTPAUTH.html.

- `<statistics enabled='' id='' interval=''/>`

Parameters of sending of the statistics on virus events to the Doctor Web company to the https://stat.drweb.com/ section.

Attributes description:

Attribute	Allowed values	Description	Default
`enabled`	`yes`—send statistics, `no`—do not send statistics.	Mode of statistics sending to the Doctor Web company.	-
`id`	-	MD5 of the Agent license key.	-

Attribute	Allowed values	Description	Default
interval	Positive integer.	Interval of statistics sending in minutes.	30

- **`<cluster>`**

  Parameters of Dr.Web Servers cluster for data exchange in multiserver anti-virus network configuration

  Contains one or several `<on multicast-group="" port="" interface=""/>` child elements.

  Attributes description:

Attribute	Description
multicast-group	IP address of multicast group through which Servers will be exchange information.
port	Port number of network interface to which transport protocol is bound to transmit the information into multicast group.
interface	IP address of network interface to which transport protocol is bound to transmit the information into multicast group.

- **`<mcast-updates` `enabled="">`**

  Configuration of updates transmission on workstations via the multicast protocol. Allowed values of `enabled`: `yes` or `no`.

  The **`<mcast-updates` `/>`** element contains one or several `<on multicast-group="" port="" interface=""/>` child elements.

  Attributes description:

Attribute	Description
multicast-group	IP address of multicast group in which stations receive multicast updates.
port	Port number of Dr.Web Server network interface, to which transport multicast protocol is bound for updates transmission. (!) For multicast updates, you must specify any unused port, particularly, different from the port that is specified in the settings of transport protocol for Server operating.
interface	IP address of Dr.Web Server network interface, to which transport multicast protocol is bound for updates transmission

The **`<mcast-updates` `/>`** element contains the `<transfer datagram-size="" assembly-timeout="" updates-interval="" chunks-interval="" resend-interval="" silence-interval="" accumulate-interval="" />` child element.

Attributes description:

Attribute	Description	Default
datagram-size	**UDP datagram size (bytes)**—size of UDP datagrams in bytes. Allowed range is 512—8192. To avoid fragmentation, it is recommended to set a value less than MTU (Maximum Transmission Unit) of the network.	4096
assembly-timeout	**File transmission time (ms.)**—during specified time, single update file is transmitted, after that Server starts sending the next file. All files which failed to transmit at the step of multicast protocol update, will be transmitted at standard update process over the TCP protocol.	180000
updates-interval	**Multicast updates duration (ms.)**—duration of update process via multicast protocol. All files that failed to transmit during update stage via multicast protocol will be transmitted in process of standard update via TCP protocol.	600000
chunks-interval	**Packages transmission interval (ms.)**—interval of packages transmission to a multicast group. The low interval value may cause significant losses during package transfer and network overload. It is not recommended to change this parameter.	20
resend-interval	**Interval between retransmission requests (ms.)**—with this interval Agents send requests for retransmission of lost packages. Server accumulates these requests after that sends lost blocks.	1000
silence-interval	**"Silence" interval on the line (ms.)**—when a file transmission is over before allowed time has expired, if during specified "silence" interval no requests from Agents for retransmission of lost packages are received, Server considers that all Agent received updates files and starts sending the next file.	10000
accumulate-interval	**Retransmission requests accumulation interval (ms.)**—during specified interval, Server accumulates requests from Agents for retransmission of lost packages. Agent request lost packages. Server accumulates these requests during specified time slot after that sends lost blocks.	2000

- `<database connections=''>`

Database definition.

Attributes description:

Attribute	Allowed values	Description	Default
connections	Positive integer.	Maximal number of connections of the Server with database. It is recommended to change default value only after consultation with the technical support.	2
speedup	yes | no	Automatically perform the delayed purging of the database after its initialization, upgrade and import (see **Administrator Manual**, p. Database).	yes

The `<database />` element contains on of the following child elements:

> (!) The `<database />` element can contain only one child element defining specific database.
>
> Database attributes that may present in the configuration file template but not described are not recommended to change without the consent of the technical support service of Doctor Web company.

- `<sqlite dbfile="database.sqlite" cache="SHARED" cachesize="2048" mmapsize="10485760" readuncommitted="off" precompiledcache="1024" synchronous="FULL" openmutex="FULL" checkintegrity="yes" autorepair="no" wal="yes" wal-max-pages="1000" wal-max-seconds="30" debug="no" />`

Defines SQLite3 embedded database.

Attributes description:

Attribute	Allowed values	Description	Default
dbfile		Database name.	
cache	SHARED | PRIVATE	Caching mode.	SHARED
cachesize	Positive integer.	Database cache size (in 1.5Kb pages).	2048
checkintegrity	yes | no	Verify integrity of database image at Dr.Web Server startup.	
autorepair	yes | no	Automatically restore corrupted database image at Dr.Web Server startup.	yes
mmapsize	Positive integer.	Maximum number of bytes of the database file that is allowed to be mapped into the process address space at one time.	• for UNIX— 10485760 • for Windows— 0
precompiledcache	Positive integer.	Cache size of precompiled sql operators in kilobytes.	1024

Attribute	Allowed values	Description	Default
`synchronous`	• `TRUE` or `FULL`—synchronous • `FALSE` or `NORMAL`—normal • `OFF`—asynchronous	Data write mode.	`FULL`
`wal`	`yes | no`	Use Write-Ahead Logging.	`yes`
`wal-max-pages`		Maximal number of "dirty" pages on reaching of which pages will been written on the disk.	1000
`wal-max-seconds`		Maximal time to delay writing the pages on the disk (in seconds).	30

- `<`**`pgsql`** `dbname=`**`"drwcs"`** `host=`**`"localhost"`** `port=`**`"5432"`** `options=`**`""`** `requiressl=`**`""`** `user=`**`""`** `password=`**`""`** `temp_tablespaces=`**`""`** `default_transaction_isolation=`**`""`** `debugproto =`**`"yes"`**`/>`

Defines PostgreSQL external database.

Attributes description:

Attribute	Allowed values	Description	Default
`dbname`		Database file name.	
`host`		PostgreSQL server host or path to UNIX domain socket.	
`port`		PostgreSQL server port or extension of UNIX domain socket file.	
`options`		Command line parameters to send to a database server. For more details, see chapter 18 at http://www.postgresql.org/docs/9.1/static/libpq-connect.html	
`requiressl`	• `1 | 0` (via Control Center) • `y | n` • `yes | no` • `on | off`	Allow SSL connections only.	• 0 • y • yes • on
`user`		Database user name.	
`password`		Database user password.	
`temp_tablespaces`		Namespace for temporary tables.	

Attribute	Allowed values	Description	Default
`default_transaction_isolation`	`read uncommitted` `read committed` `repeatable read` `serializable`	Transaction isolation level.	`read committed`

- `<oracle connectionstring="" user="" password="" client="" prefetch-rows="0" prefetch-mem="0"/>`

Defines Oracle external database.

Attributes description:

Attribute	Allowed values	Description	Default
`connectionstring`		String with Oracle SQL Connect URL or Oracle Net keyword-value pairs.	
`user`		Registration name of database user.	
`password`		Database user password.	
`client`		Path to the Oracle Instant Client for the access to the Oracle DB. Dr.Web Server is supplied with the Oracle Instant Client of 11 version. But, for newer Oracle Servers or if the Oracle driver contains errors, you can download corresponding driver from the Oracle site and set the path to the driver in this field.	
`prefetch-rows`	0-65535	Number of rows to be prefetched when executing a query to the database.	0—use the value = 1 (database default)
`prefetch-mem`	0-65535	Memory allocated for rows to be prefetched when executing a query to the database.	0—unlimited

- `<odbc dsn="drwcs" user="" pass="" transaction="DEFAULT" />`

Defines connection to an external database via ODBC.

Attributes description:

Attribute	Allowed values	Description	Default
`dsn`		ODBC data source name.	`drwcs`
`user`		Registration name of database user.	`drwcs`

Attribute	Allowed values	Description	Default
`pass`		Database user password.	`drwcs`
`limit`	Positive integer.	Reconnect to the DBMS after specified number of transaction.	0—do not reconnect
`transaction`	• `SERIALIZABLE`— serializable • `READ_UNCOMMITTED`— read uncommitted data • `READ_COMMITTED`—read committed data • `REPEATABLE_READ`— repeatable read • `DEFAULT`—equal `""`— depends on DBMS.	Transaction isolation level. Some DBMS support `READ_COMMITTED` only.	`DEFAULT`

- `<mysql dbname="drwcs" host="localhost" port="3306" user="" password="" ssl="no" debug="no" />`

Defines MySQL/MariaDB external database.

Attributes description:

Attribute	Allowed values	Description	Default
`dbname`		Database name.	`drwcs`
`host`	Either of the two.	Database server address for TCP/IP connections.	localhost
		Path to UNIX socket file when using UDS. If not set, the Server tries to locate the file in one of standard mysqld directories.	`/var/run/mysqld/`
`port`	Either of the two.	Port number to connect to the database via TCP/IP.	3306
		UNIX socket file name when using UDS.	`mysqld.sock`
`user`		Registration name of database user.	`""`
`password`		Database user password.	`""`
`ssl`	`yes` | any other string	Allow SSL connections only.	`no`
`precompiled cache`	Positive integer.	Cache size of precompiled sql operators in kilobytes.	1024

- `<acl>`

Access control lists. Allows to configure restrictions for network addresses from which Agents, network installers and other (neighboring) Dr.Web Servers will be able to access the Server.

The `<acl />` element contains the following child elements into which limitations for corresponding connection types are configured:

- `<install />`—the list of limitations on IP addresses from which Dr.Web Agents installers can connect to this Server.

- `<agent />`—the list of limitations on IP addresses from which Dr.Web Agents can connect to this Server.

- `<links />`—the list of limitations on IP addresses from which neighbor Dr.Web Servers can connect to this Server.

- `<discovery />`—the list of limitations on IP addresses from which broadcast queries can be received by the *Server Detection Service*.

All child elements contain the same structure of nested elements that defines the following limitations:

- `<priority mode="">`

  Lists priority. Allowed values of `mode`: `"allow"` or `"deny"`. For the `<priority mode="deny">` value, the `<deny />` list has a higher priority than the `<allow />` list. Addresses not included in any of the lists or included into both of them are denied. Allowed only addresses that are included in the `<allow />` list and not included in the `<deny />` list.

- `<allow />`

  The list of TCP addresses from which the access is allowed. The `<allow />` element contains one or several `<ip address="" />` child elements to specify allowed addresses in the IPv4 format and `<ip6 address="" />` to specify allowed addresses in the IPv6 format. The attribute `address` defines network addresses in the following format: *<IP address>*/ [*<prefix>*].

- `<deny />`

  The list of TCP addresses from which the access is denied. The `<deny />` element contains one or several `<ip address="" />` child elements to specify denied addresses in the IPv4 format and `<ip6 address="" />` to specify denied addresses in the IPv6 format. The attribute `address` defines network addresses in the following format: *<IP address>*/ [*<prefix>*].

- `<scripts profile='' stack='' trace=''/>`

  Scripts profiling parameters configuration.

  Attributes description:

Attribute	Allowed values	Description	Default
profile	• yes, • no.	Log information on Server scripts execution profiling. This parameter is used by technical support and developers. It is not recommended to change this parameter without need.	no
stack		Log information on Server scripts execution from a call stack. This parameter is used by technical support and developers.	

Attribute	Allowed values	Description	Default
		It is not recommended to change this parameter without need.	
`trace`		Log information on Server scripts execution tracing. This parameter is used by technical support and developers. It is not recommended to change this parameter without need.	

- **`<lua-module-path>`**

  Lua interpreter paths.

  > ⚠ The paths order is important.

  The **`<lua-module-path />`** element contains the following child elements:

  - **`<cpath root=''/>`**—path to the binary modules folder. Allowed values of `root`: `home` (default), `var`, `bin`, `lib`.

  - **`<path value=''/>`**—path to the scripts folder. If it is not a child of the **`<jobs />`** or **`<hooks />`** elements, then it is used by both. Paths specified in the `value` attribute, are relative from paths in the `root` attribute of the **`<cpath />`** element.

  - **`<jobs />`**—paths for tasks from the Server schedule.

    The **`<jobs />`** element contains one or several **`<path value=''/>`** child elements to specify the path to the scrips folder.

  - **`<hooks />`**—paths for the user hooks of the Server.

    The **`<hooks />`** element contains one or several **`<path value=''/>`** child elements to specify the path to the scrips folder.

- **`<transports>`**

  Configuration of transport protocols parameters used by the Server to connect with clients. Contains one or several **`<transport discovery='' ip='' name='' multicast='' multicast-group='' port=''/>`** child elements.

  Attributes description:

Attribute	Description	Obligatory	Allowed values	Default
`discovery`	Defines whether the Server detection service is used or not.	no, specified with the ip attribute only.	`yes, no`	`no`
• `ip` • `unix`	Defines the family of used protocols and specifies the interface address.	yes	–	• 0.0.0.0 • -

Attribute	Description	Obligatory	Allowed values	Default
name	Specifies the Server name for the Server detection service.	no	–	drwcs
multicast	Defines whether the Server included into a multicast group or not.	no, specified with the ip attribute only.	yes, no	no
multicast-group	Specifies the address of the multicast group into which the Server is included.	no, specified with the ip attribute only.	–	• 231.0.0.1 • [ff18::231.0.0.1]
port	Port to listen.	no, specified with the ip attribute only.	–	2193

- **`<protocols>`**

  The list of disabled protocols. Contains one or several `<protocol enabled='' name=''/>` child elements.

  Attributes description:

Attribute	Allowed values	Description	Default
enabled	• yes—protocol is enabled, • no—protocol is disabled.	Protocol usage mode.	no
name	• AGENT—protocol that allows interaction of the Server with Dr.Web Agents. • MSNAPSHV—protocol that allows interaction of the Server with the Microsoft NAP Validator component of system health validating. • INSTALL—protocol that allows interaction of the Server with Dr.Web Agent installers. • CLUSTER—protocol for interaction between Servers in the cluster system. • SERVER—protocol that allows interaction of Dr.Web Server with other Dr.Web Servers.	Protocol name.	-

- **`<plugins>`**

  The list of disabled extensions. Contains one or several `<plugin enabled='' name=''/>` child elements.

  Attributes description:

Attribute	Allowed values	Description	Default
enabled	• yes—extension is enabled, • no—extension is disabled.	Extension usage mode.	no

Attribute	Allowed values	Description	Default
`name`	`WEBMIN`—Dr.Web Security Control Center extension for managing the Server and anti-virus network via the Control Center. `FrontDoor`—Dr.Web Server FrontDoor extension that allows connections of Server remote diagnostics utility.	Extension name.	-

- `<license-exchange>`

  Settings of licenses propagation between Dr.Web Servers.

  The `<license-exchange />` element contains the following child elements:

  - `<expiration-interval value=''/>`

  - `<prolong-preact value=''/>`

  - `<check-interval value=''/>`

  Elements description:

Element	Description	The value attribute default values, min.
`expiration-interval`	**Validity period of donated licenses**—time period on which licenses are donated from the key on this Server. The setting is used if the Server donates licenses to neighbor Servers.	1440
`prolong-preact`	**Period for accepted licenses renewal**—period till the license expiration, starting from which this Server initiates renewal of the license which is accepted from the neighbor Server. The setting is used if the Server accepts licenses from neighbor Servers.	60
`check-interval`	**License synchronization period**—interval for synchronising information about donating licenses between Servers.	1440

- `<email from="" debug="">`

  Parameters of sending emails from the Control Center, e.g., as administrative notifications or when mailing installation packages of the stations.

  Attributes description:

Attribute	Allowed values	Description	Default
`from`	-	Email address which will be set as a sender of emails.	`drwcs@localhost`
`debug`	`yes`—use debug mode, `no`—do not use debug mode.	Use debug mode to get SMTP session detailed log.	`no`

The `<email />` element contains the following child elements:

```
□ <smtp server="" user="" pass="" port="" start_tls="" auth_plain="" auth_login=""
   auth_cram_md5="" auth_digest_md5="" auth_ntlm="" conn_timeout=""/>
```

SMTP server parameters configuration to send emails.

Attributes description:

Attribute	Allowed values	Description	Default
server	-	SMTP server address which is used to send emails.	127.0.0.1
user	-	name of SMTP server user, if the SMTP server requires authorization.	-
pass	-	password of SMTP server user, if the SMTP server requires authorization.	-
port	Positive integer.	SMTP server port which is used to send emails.	25
start_tls		Encrypt data transfer. At this, switching to secured connection is performed by using the STARTTLS command. The 25 port is used by default for the connection.	yes
auth_plain	• yes—use this authentication type, • no—do not use this authentication type.	Use *plain text* authentication on a mail server.	no
auth_login		Use *LOGIN* authentication on a mail server.	no
auth_cram_md5		Use *CRAM-MD5* authentication on a mail server.	no
auth_digest_md5		Use *DIGEST-MD5* authentication on a mail server.	no
auth_ntlm		Use *AUTH-NTLM* authentication on a mail server.	no
conn_timeout	Positive integer.	Connection timeout for SMTP server.	180

```
□ <ssl enabled="" verify_cert="" ca_certs=""/>
```

SSL traffic encryption parameters configuration for sending emails.

Attributes description:

Attribute	Allowed values	Description	Default
enabled	• yes—use SSL, • no—do not use SSL.	SSL encryption usage mode.	no

Attribute	Allowed values	Description	Default
`verify_cert`	• `yes`—check SSL certificate, • `no`—do not check SSL certificate.	Validate the SSL certificate of a mail server.	`no`
`ca_certs`	-	The path to the root SSL certificate of Dr.Web Server.	-

- `<`**`track-epidemic`** `enabled='' period='' threshold=''/>`

Configuration of parameters for tracking virus epidemic in the network.

Attributes description:

Attribute	Allowed values	Description	Default
`enabled`	• `yes`—enable epidemic tracking and send single notification on threats, • `no`—disable epidemic tracking and send notifications on threats in normal mode.	Administrator notification mode on virus epidemic.	`no`
`period`	Positive integer.	Time period in seconds, during which specified number of messages on infections must be received, so that Dr.Web Server may send to the administrator a single notification on epidemic on all cases of infection.	300
`threshold`		The number of messages on infections that must be received in specified time period, so that Dr.Web Server may send to the administrator a single notification on epidemic on all cases of infection.	100

- `<`**`default-lang`** `value=""/>`

Default language which is used by components and systems of Dr.Web Servers if failed to get language settings from the Server database. Particularly used by Dr.Web Security Control Center and administrator notification system if the database has been corrupted and the language settings cannot be obtained.

G2. Dr.Web Security Control Center Configuration File

The `webmin.conf` Dr.Web Security Control Center configuration file is presented in the XML format and located in the `etc` subfolder of Server installation folder.

Description of Dr.Web Security Control Center configuration file parameters:

`<`**`version`** `value="">`

Current version of Dr.Web Server.

- `<server-name value=""/>`

  The name of Dr.Web Server.

  Parameter is specified in the following format:

  <Server IP address or DNS name>[`:`*<port>*]

  If the Server address is not specified, computer name returned by the operating system or the Server network address: DNS name, if available, otherwise—IP address are used.

  If the port number is not specified, the port from a request is used (e.g., for requests to the Server from the Control Center or via the **Web API**). Particularly, for the requests from the Control Center it is the port specified in the address line for connection of the Control Center to the Server.

- `<document-root value=""/>`

  Path to web pages root folder. Default is `value="webmin"`.

- `<ds-modules value=""/>`

  Path to modules folder. Default is `value="ds-modules"`.

- `<threads value=""/>`

  Number of parallel requests processed by the web server. This parameter affects server performance. It is not recommended to change this parameter without need.

- `<io-threads value=""/>`

  Number of threads serving data transmitted in network. This parameter affects Server performance. It is not recommended to change this parameter without need.

- `<compression value="" max-size="" min-size=""/>`

  Traffic compression settings for data transmission over a communication channel with the web server via HTTP/HTTPS.

  Attributes description:

Attribute	Description	Default
`value`	Data compression level from 1 to 9, where the 1 is minimal level and the 9 is maximal compression level.	9
`max-size`	Maximal size of HTTP responses which will be compressed. Specify the 0 value to disable limitation on maximal size of HTTP responses to be compressed.	51200 KB
`min-size`	Minimal size of HTTP responses which will be compressed. Specify the 0 value to disable limitation on minimal size of HTTP responses to be compressed.	32 bytes

- `<keep-alive timeout="" send-rate="" receive-rate=""/>`

  Keep HTTP session active. Allows to establish permanent connection for requests via the HTTP v. 1.X.

Attributes description:

Attribute	Description	Default
timeout	HTTP session timeout. For persistent connections, Server releases the connection, if there are no requests received from a client during specific time slot.	15 sec.
send-rate	Minimal acceptable data send rate. If outgoing network speed is lower than this value, connection will be rejected. Specify 0 to ignore this limit.	1024 Bps
receive-rate	Minimal acceptable data receive rate. If incoming network speed is lower than this value, connection will be rejected. Specify 0 to ignore this limit.	1024 Bps

- `<buffers-size send="" receive=""/>`

  Configuration of buffers sizes for sending and receiving data.

  Attributes description:

Attribute	Description	Default
send	Size of buffers used when sending data. This parameter affects server performance. It is not recommended to change this parameter without need.	8192 bytes
receive	Size of buffers used when receiving data. This parameter affects server performance. It is not recommended to change this parameter without need.	2048 bytes

- `<max-request-length value=""/>`

  Maximum allowed size of HTTP request in KB.

- `<reverse-resolve enabled="no"/>`

  Replace IP address with DNS names of computers in the Server log file. Allowed values of enabled: `yes` or `no`.

- `<script-errors-to-browser enabled="no"/>`

  Show script errors in browser (error 500). This parameter is used by technical support and developers. It is not recommended to change this parameter without need.

- `<trace-scripts enabled=""/>`

  Enable scripts tracing. This parameter is used by technical support and developers. It is not recommended to change this parameter without need. Allowed values of `enabled`: `yes` or `no`.

- `<profile-scripts enabled="no" stack="no"/>`

  Profiling configuration. Performance is measuring—execution time of functions and scripts of the web server. This parameter is used by technical support and developers. It is not recommended to change this parameter without need.

  Attributes description:

Attribute	Allowed values	Description
`enabled`	• `yes`—enable profiling, • `no`—disable profiling.	Scripts profiling mode.
`stack`	• `yes`—log data, • `no`—do not log data.	Logging mode of information on profiling (function parameters and returned values) into the Server log.

- `<abort-scripts enabled=""/>`

  Allow aborting of scripts execution if the connection was aborted by client. This parameter is used by technical support and developers. It is not recommended to change this parameter without need. Allowed values of `enabled`: `yes` or `no`.

- `<search-localized-index enabled=""/>`

  Use localized versions of pages. If the flag is set, server searches for localized version of specified page according to the language priority which is set in the `Accept-Language` field of client header. Allowed values of `enabled`: `yes` or `no`.

- `<default-lang value=""/>`

  Language of documents returned by the web server in the absence of the `Accept-Language` header in the HTTP request. The `value` attribute is the ISO language code. Default is `ru`.

- `<ssl certificate="" private-key="" keep-alive=""/>`

  SSL certificate settings.

  Attributes description:

Attribute	Description	Allowed values	Default
`certificate`	Path to SSL certificate file.	-	`certificate.pem`
`private-key`	Path to SSL private key file.	-	`private-key.pem`
`keep-alive`	Use keep-alive SSL connection. Older browsers may not work properly with regular SSL connections. Disable this parameter, if you have problems with SSL protocol.	• `yes`, • `no`.	`yes`

- `<listen>`

  Configure parameters to listen for network connections.

  The `<listen />` element contains the following child elements:

  - `<insecure />`

    The list of interfaces to listen for accepting connections via the HTTP protocol for unsecured connections. Default port is 9080.

    The `<insecure />` element contains one or several `<endpoint address=""/>` child elements to specify allowed addresses in the IPv4 or IPv6 format. In the `address` attribute, network addresses are specified in the following format: *<Protocol>://<IP address>*.

□ `<secure />`

The list of interfaces to listen for accepting connections via the HTTPS protocol for secured connections. Default port is 9081.

The `<secure />` element contains one or several `<endpoint address=""/>` child elements to specify allowed addresses in the IPv4 or IPv6 format. In the `address` attribute, network addresses are specified in the following format: *<Protocol>://<IP address>*.

● `<access>`

Access control lists. Allow to configure limitations on network addresses to listen for accepting incoming HTTP and HTTPS requests by the web server.

The `<access />` element contains the following child elements, which configuring limitations for corresponding connection types:

□ `<secure priority="">`

The list of interfaces to listen for accepting secured connections via the HTTPS protocol. Default port is 9081.

Attributes description:

Attribute	Allowed values	Description	Default
priority	allow	Allowance priority for HTTPS—addresses not included in any of the lists (or included into both), are allowed.	deny
	deny	Denial priority for HTTPS—addresses not included in any of the lists (or included into both), are denied.	

The `<secure />` element contains one or several following child elements: `<allow address=""/>` and `<deny address=""/>`.

Elements description:

Element	Description	Default value of address attribute
allow	Addresses which are allowed to access via the HTTPS protocol for secured connections.	tcp://127.0.0.1
deny	Addresses which are denied to access via the HTTPS protocol for secured connections.	-

□ `<insecure priority="">`

The list of interfaces to listen for accepting unsecured connections via the HTTP protocol. Default port is 9080.

Attributes description:

Attribute	Allowed values	Description	Default
`priority`	`allow`	Allowance priority for HTTP—addresses not included in any of the lists (or included into both), are allowed.	`deny`
	`deny`	Denial priority for HTTP—addresses not included in any of the lists (or included into both), are denied.	

The `<insecure />` element contains one or several following child elements: `<allow address=""/>` and `<deny address=""/>`.

Elements description:

Element	Description	Default value of address attribute
`allow`	Addresses which are allowed to access via the HTTP protocol for unsecured connections.	`tcp://127.0.0.1`
`deny`	Addresses which are denied to access via the HTTP protocol for unsecured connections.	-

G3. Download.conf Configuration File

The download.conf file purposes:

1. During creating and operating of Dr.Web Servers cluster system, the file allows to distribute the load between the Servers of a clusters when connecting a large number of new stations.

2. If a custom port is used at Dr.Web Server, the file allows to specify this port during generating installation file of the Agent.

The `download.conf` file is used during generating the installation file for a new station of the anti-virus network. Parameters of this file allows to specify address of the Server and the port, which are used to connect the Agent Installer to the Server, in the following format:

```
download = { server = '<Server_Address>'; port = <port_number> }
```

where:

- *<Server_Address>*—IP address or DNS name of the Server.

  During generating of the Agent installation file, the Server address is taken from the `download.conf` file first. If the Server address is not specified in the `download.conf` file, when value of the `ServerName` parameter from the `webmin.conf` file is taken. Otherwise, the name of the computer, returned by an operating system is used.

- *<port_number>*—port to connect the Agent Installer to the Server.

If the port is not specified in the `download.conf` file, 2193 port is used by default (sets in the **Administration** → **Dr.Web Server configuration** → the **Network** tab → the **Transport** tab in the Control Center).

By default, the `download` parameter is disabled in the `download.conf` file. To use the `download.conf` file, uncomment this parameter by deleting the "`--`" in the start of the line, and specify corresponding values of an address and a port of the Server.

G4. Proxy Server Configuration File

The `drwcsd-proxy.conf` configuration file of the Proxy server is presented in the XML format and located in the following folder:

- Windows OS: `C:\ProgramData\Doctor Web\drwcs\etc`
- Linux OS: `/var/opt/drwcs/etc`
- FreeBSD OS: `/var/drwcs/etc`

Description of Dr.Web Server configuration file parameters:

- `<listen spec="">`

    The `<drwcsd-proxy />` root element contains one or several obligatory `<listen />` elements which define basic settings of the Proxy Server for receiving connections.

    The `<listen />` element contains one obligatory attribute `spec`, attributes of which define an interface to "listen" incoming client connections and whether the `discovery` mode is enabled on this interface.

    The `spec` element attributes:

Attribute	Obligatory	Allowed values	Description	Default
`ip | unix`	yes	—	Type of the protocol for receiving incoming connections. Address which the Proxy server listens is set as an attribute.	`0.0.0.0 | -`
`port`	no	—	Port which the Proxy server listens.	`2193`
`discovery`	no	`yes, no`	The mode of Server imitation. Allows detection of the Proxy server as Dr.Web Server by the Network scanner.	`yes`
`multicast`	no	`yes, no`	Network "listening" mode for receiving multicast requests by the Proxy server.	`yes`

`multicast-group`	no	—	Multicast group where the Proxy server is located.	`231.0.0.1`
				
				`[ff18::231.0.0.1]`

Depending on the protocol, the list of non-obligatory properties in the `spec` attribute may vary.

The list of non-obligatory properties, which can be set (+) or cannot be set (-) in the `spec` attribute, depending on the protocol:

Protocol	Attribute presence			
	port	**discovery**	**multicast**	**multicast-group**
ip	+	+	+	+
unix	+	–	–	–

> ! The **discovery** mode must be enabled directly in any case even if the **multicast** mode is already enabled.
>
> ---
>
> The forwarding algorithm for the list of Dr.Web Servers is given in the **Administrator Manual**.

◻ **`<compression` `mode=""` `level="">`**

The `<compression />` element is a child of the `<listen />` element, it defines compression parameters for the client—Proxy server channel.

Attributes description:

Attribute	Allowed values	Description	Default
mode	yes	Compression enabled.	possible
	no	Compression disabled.	
	possible	Compression possible.	
level	integer from 1 to 9	Compression level. Only for the client—Proxy server channel.	8

◻ **`<encryption` `mode="">`**

The `<encryption />` element is a child of the `<listen />` element, it defines encryption parameters for the client—Proxy server channel.

Attributes description:

Attribute	Allowed values	Description	Default
mode	yes	Encryption enabled.	possible
	no	Encryption disabled.	
	possible	Encryption possible.	

□ `<forward to="" master="">`

Specifies the settings to redirect the incoming connections. The `<forward />` element is obligatory. Several `<forward />` elements can be set with the different attribute values.

Attributes description:

Attribute	Allowed values	Description	Obligatory
to	An address is specified according to the [The Specification of Network Addresses](#), particularly, in the following format: `tcp/<DNS_name>:<port>`.	Addresses of Dr.Web Server where to redirect the connection.	yes
master	• `yes`—the Server is unconditional managing. • `no`—the Server is not managing under any conditions. • `possible`—the Server will be managing only if there are no explicit managing Servers (with the `yes` value for the `master` attribute).	The attribute defines if the Proxy server settings can be remotely edited via the Control Center of Dr.Web Server specified in the `to` attribute. You can assign managing to any number of Servers (set the `master="yes"`); Proxy server connects to all the managing Servers by their order in the settings until it gets the first valid (not empty) configuration. Also, you can assign none of the Servers managing (set the `master="no"`). In this case, the Proxy server parameters (including the assignment of managing Servers) can be configured only locally via the Proxy server configuration file.	no

> ⓘ If the `master` attribute is absent for the Server, default is the same as `master="possible"`.
>
> In the configuration file created by the installer during the Proxy server installation, the `master` attribute is not defined for any of the Servers.

The `<forward />` element is obligatory. Each `<listen />` element can contain several `<forward />` elements.

▪ `<compression mode="" level="">`

If the `<compression />` element is a child of the `<forward />` element, it defines compression parameters for the Server—Proxy server channel. Attributes are the same as described above.

▪ `<encryption mode="">`

If the `<encryption />` element is a child of the `<forward />` element, it defines encryption parameters for the Server—Proxy server channel. Attributes are the same as described above.

▫ **`<update-bandwidth`** `value="" queue-size="">`

The `<update-bandwidth />` element allows to specify the speed limitation on updates transferring from the Server to clients and the number of clients that downloading updates at the same time.

Attributes description:

Attribute	Allowed values	Description	Default
`value`	• KB/sec. • `unlimited`	Maximum summary speed of updates transferring.	`unlimited`
`queue-size`	• positive integer • `unlimited`	Maximum allowable number of updates distribution sessions running at the same time from the Server. When the limit is reached, the Agent requests are placed into the waiting queue. The waiting queue size is unlimited.	`unlimited`

   ▪ **`<bandwidth`** `value="" time-map="" />`

The `<update-bandwidth />` element may have one or several `<bandwidth />` child elements. This element allows to specify speed limitation of data transferring for the specified time period.

Attributes description:

Attribute	Allowed values	Description	Default
`value`	• KB/sec. • `unlimited`	Maximum summary speed of data transferring for the Agent updates.	`unlimited`
`time-map`	—	The mask that specifies the time period to apply limitations.	—

> (!) The value of the `time-map` parameter is defined same as the schedule of traffic updates in the Server settings. The `time-map` manual generating is not currently supported.

▫ **`<install-bandwidth`** `value="" queue-size="">`

The `<install-bandwidth>` element allows to specify the speed limitation on data transferring during Agents installation and number of clients that downloading data for installation at the same time.

Attributes description:

Attribute	Allowed values	Description	Default
`value`	• KB/sec. • `unlimited`	Maximum summary speed of data transferring during the Agents installation.	`unlimited`
`queue-size`	• positive integer • `unlimited`	Maximum allowable number of the Agent installation sessions running at the same time from the Server. When the limit is reached, the Agent requests are	`unlimited`

Attribute	Allowed values	Description	Default
		placed into the waiting queue. The waiting queue size is unlimited.	

- `<bandwidth value="" time-map="" />`

The `<install-bandwidth />` element may have one or several `<bandwidth />` child elements. This element allows to specify speed limitation of data transferring for the specified time period.

Attributes description:

Attribute	Allowed values	Description	Default
`value`	• KB/sec. • `unlimited`	Maximum summary speed of data transferring for the Agent installation.	`unlimited`
`time-map`	—	The mask that specifies the time period to apply limitations.	—

> ⚠ The value of the `time-map` parameter is defined same as the schedule of traffic updates in the Server settings. The `time-map` manual generating is not currently supported.

- `<cache enabled="">`

Configure the settings of Proxy server repository cache.

Attributes description:

Attribute	Allowed values	Description	Default
`enabled`	`yes	no`	Defines if the caching is enabled.	`yes`

The `<cache />` element contains the following child elements:

Element	Allowed values	Description	Default
`<clean-interval value="" />`	positive integer	Number of stored revisions.	3
`<unload-interval value="" />`	positive integer	Time slot between purging of old revisions in minutes.	60
`<repo-check mode="" />`	positive integer	Time slot between unloads of unused files from the memory in minutes.	10
`<repo-check />`	`idle	sync`	Check of cache integrity either at start (may take time) or in background.	`idle`

- `<synchronize enabled="" schedule="">`

Settings for synchronization of Proxy server and Dr.Web Server repositories.

Attributes description:

Attribute	Allowed values	Description	Default
`enabled`	`yes	no`	Defines if the repository synchronization is enabled.	`yes`
`schedule`	—	Schedule for synchronization of the specified products.	—

> ⊘ The value of the `schedule` parameter is defined same as the schedule of synchronization in the Control Center settings. The `schedule` manual generating is not currently supported.

The `<product name="" />` child elements give the list of products for the synchronization:

- 10-drwbases—virus databases,
- 10-drwgatedb—SpIDer Gate bases,
- 10-drwspamdb—Anti-spam bases,
- 10-drwupgrade—Dr.Web Updater,
- 20-drwagent—Dr.Web Agent for Windows,
- 20-drwandroid11—Dr.Web Agent for Android,
- 20-drwunix—Dr.Web Agent for UNIX,
- 40-drwproxy—Dr.Web Proxy server.

- `<events enabled="" schedule="" />`

Settings for caching the events received from the Agents.

Attributes description:

Attribute	Allowed values	Description	Default
`enabled`	`yes	no`	Defines if the caching is enabled. If enabled, the events are sent to the Server according to the timetable. If the caching is disabled, events will be sent to the Server immediately after receiving by the Proxy server.	`yes`
`schedule`	—	Timetable according to which the events from the Agents will be transmitted.	—

> ⊘ The value of the `schedule` parameter is defined same as the schedule of events sending in the Control Center settings. The `schedule` manual generating is not currently supported.

- `<update enabled="" schedule="" />`

Settings for the automatic update of the Proxy server.

For the automatic update, if the synchronization is enabled, the Proxy server updates are downloaded from the Server according to the synchronization timetable (see above) and are installed according to the update timetable (by default, with no time limitations). If the synchronization is disabled, when updates are downloaded and installed by update timetable (by default, with no time limitations).

Attributes description:

Attribute	Allowed values	Description	Default
enabled	yes | no	Defines if the automatic update is enabled.	yes
schedule	—	Timetable according to which the updates will be downloaded (if synchronization is not set) and installed.	—

> The `schedule` manual generating is not currently supported. By default, the automatic update is allowed with no time limitations.

- `<core-dump enabled="" maximum="" />`

  The collecting mode and number of memory dumps in case of SEH exception occurs.

  > Memory dumps setup is available for Windows OS only.
  >
  > To collect memory dump, OS must contain the `dbghelp.dll` library.

  Dump is written to the following folder: `%All Users\Application Data%\Doctor Web\drwcsd-proxy-dump\`

  Attributes description:

Attribute	Allowed values	Description	Default
enabled	yes | no	Defines if dumps collecting is enabled.	yes
maximum	positive integer	Maximal dumps number. The oldest are deleted.	10

- `<dns>`

  DNS settings.

  `<timeout value=''/>`

  Timeout in seconds for resolving DNS direct/reverse queries. Leave the value blank to disable restriction on wait time until the end of the resolution

  `<retry value=''/>`

  Maximum number of repeated DNS queries on fail while resolving the DNS query.

  `<cache enabled='' negative-ttl='' positive-ttl=''/>`

Time for storing responses from DNS server in the cache.

Attributes description:

Attribute	Allowed values	Description
enabled	`yes`—store responses in the cache, `no`—do not store responses in the cache.	Mode of storing responses in the cache.
negative-ttl	—	Storage time in the cache (TTL) of negative responses from the DNS server in minutes.
positive-ttl	—	Storage time in the cache (TTL) of positive responses from the DNS server in minutes.

`<servers>`

List of DNS servers, which replaces default system list. Contains one or several `<server address=""/>` child elements, the `address` parameter of which defines IP address of the server.

`<domains>`

List of DNS domains, which replaces default system list. Contains one or several `<domain name="">` child elements, the `name` parameter of which defines the domain name.

G5. Repository Loader Configuration File

The `drwreploader.conf` Repository Loader configuration file is presented in the XML format and located in the etc subfolder of Server installation folder.

To use the configuration file

- For the console utility, the path to the file must be specified in the `--config` switch.
- For the graphical utility, the file must reside in the utility folder. If the utility is ran without configuration file, it will be created in the utility folder and will be used at next launches.

Description of the Repository Loader configuration file parameters:

- `<mode value="" path="" archive="" key="" />`

Attributes description:

Attribute	Description	Allowed values
value	Updates loading mode: `repository`—repository is downloaded in the Server repository format. Loaded files can be directly imported via the Control Center as the Server repository updates. `mirror`—repository is downloaded in the GUS updates zone format. Loaded files can be placed on the updates mirror in	`repository | mirror`

Attribute	Description	Allowed values
	your local network. Further, Servers can be configures to receive updates directly from this updates mirror containing the last version of the repository but not from the GUS servers.	
path	The folder for downloading the repository.	–
archive	Pack downloaded repository into a zip archive automatically. This option allows to get prepared archive file for import downloaded repository archive to the Server via the Control Center, for the **Administrating → Repository Content** section.	`yes	no`
key	Dr.Web license key file. Instead of a license key you can specify only MD5 hash of a license key, which you can view in the Control Center in the **Administration → License Manager** section.	–

- `<`**`log`** `path="" verbosity="" rotate="" />`

Repository Loader log settings.

Attributes description:

Attribute	Description	Allowed values
path	Path to the log file.	–
verbosity	Log level of detail. `TRACE3` is by default.	`ALL, DEBUG3, DEBUG2, DEBUG1, DEBUG, TRACE3, TRACE2, TRACE1, TRACE, INFO, NOTICE, WARNING, ERROR, CRIT.` The `ALL` and `DEBUG3` values are synonyms.
rotate	Repository Loader log rotation mode in the format: *<N><f>*, *<M><u>*. Same as Server log rotation. By default, it is `10,10m`, which means storing of 10 files 10 megabytes each, use compression.	–

- `<`**`update`** `url="" proto="" cdn="" update-key="" version="" >`

General repository loading settings.

Attributes description:

Attribute	Description	Allowed values
url	A GUS servers folder where updates of Dr.Web products are located.	–
proto	The protocol type to receive updates from update servers. For all protocols, updates are downloaded according to the settings of the GUS servers list.	`http	https	ftp	ftps	sftp	scp	file`

Attribute	Description	Allowed values
cdn	Allow downloading repository from GUS via Content Delivery Network	yes | no
update-key	Path to a public key or to a folder with a public key to validate the signature of updates that are loaded from GUS. The update-key-*.upub public keys to validate updates can be found on Dr.Web Server in the etc folder.	–
version	The Server version to which the updates must be loaded.	–

▫ **<servers>**

Update servers list. GUS servers are listed in the order the utility contacts them when downloading the repository.

Contains the **<server>** child elements with update servers.

▫ **<auth** user="" password="" **/>**

User credentials to authenticate on updates server, if the updates server requires authorization.

Attributes description:

Attribute	Description
user	User name at updates server.
password	Password at updates server.

▫ **<proxy** host="" port="" user="" password="" **/>**

Parameters for connecting to the GUS via the proxy server.

Attributes description:

Attribute	Description
host	The network address of the proxy server.
port	The port number of the proxy server. Default is 3128.
user	User name on the proxy server if used proxy server requests authorization.
password	Password on the proxy server if used proxy server requests authorization.

▫ **<ssl** cert-mode="" cert-file="" **/>**

The type of SSL certificates that will be automatically accepted. This option is used only for secure protocols that support encrypting.

Attributes description:

Attribute	Description	Allowed values
`cert-mode`	Certificated to accept automatically.	▫ `any`—accept all certificates, ▫ `valid`—accept only valid certificates, ▫ `drweb`—accept only Dr.Web certificates. ▫ `custom`—accept user-defined certificates.
`cert-file`	Path to the cert file.	–

▫ `<ssh mode="" pubkey="" prikey="" />`

The type of the authorization on the update server when accessing by SCP/SFTP.

Attributes description:

Attribute	Description	Allowed values
`mode`	Authorization type.	▫ `pwd`—authorization using a password. A password is set in the `<auth />` tag. ▫ `pubkey`—authorization using a public key. A public key is set in the `pubkey` attribute or extracted from the private key specified in the `prikey`.
`pubkey`	Public SSH key	–
`prikey`	Private SSH key	–

- `<products>`

  Loading products settings.

  ▫ `<product name="" update="" />`

  Each product settings separately.

  Attributes description:

Attribute	Description	Allowed values
`name`	Product name.	• `05-drwmeta`—Dr.Web Server security data, • `10-drwbases`—virus databases, • `10-drwgatedb`—SpIDer Gate bases, • `10-drwspamdb`—Anti-spam bases, • `10-drwupgrade`—Dr.Web Updater, • `20-drwagent`—Dr.Web Agent for Windows, • `20-drwandroid11`—Dr.Web Agent for Android, • `20-drwcs`—Dr.Web Server, • `20-drwunix`—Dr.Web Agent for UNIX, • `40-drwproxy`—Dr.Web Proxy server, • `80-drwnews`—Doctor Web News.
`update`	Enable this product downloading.	`yes	no`

- `<schedule>`

  The schedule to receive updates periodically. At this, you do not have to launch the utility manually, the repository downloading performed automatically according to the specified time slots.

  ▫ `<job period="" enabled="" min="" hour="" day="" />`

  Settings of scheduled loading execution.

Attribute	Description	Allowed values
period	Periodicity for loading task execution.	• `every_n_min`—every N minutes, • `hourly`—every hour, • `daily`—every day, • `weekly`—every week.
enabled	Downloading task is enabled.	`yes	no`
min	Minute to execute the task.	integers from 0 to 59
hour	Hour to execute the task. Relevant for `daily` and `weekly`.	integers from 0 to 23
day	Day to execute the task. Relevant for `weekly`.	• `mon`—Monday, • `tue`—Tuesday, • `wed`—Wednesday, • `thu`—Thursday, • `fri`—Friday, • `sat`—Saturday, • `sun`—Sunday.

Appendix H. Command Line Parameters of the Programs Included in Dr.Web Enterprise Security Suite

H1. Introduction

Command line parameters have a higher priority than the default settings, or other constant settings (set in the Server configuration file, Windows OS registry, etc.). In some cases, the parameters specified at launch also predetermine the constant parameters. Such cases are described below.

When describing the syntax of parameters of separate programs optional parts are enclosed in brackets `[...]`.

⚠ Features described below in the H1 section, do not applied to the Agent network installer.

Some command line parameters have a form of a switch—they begin with a hyphen. Such parameters are also called switches, or options.

Many switches can be expressed in various equivalent forms. Thus, the switches which imply a logical value (`yes/no`, `disable/enable`) have a negative variant, for example, the `-admin-rights` switch has a pair `-no-admin-rights` with the opposite meaning. They can also be specified with an explicit value, for example, `-admin-rights=yes` and `-admin-rights=no`.

> (!) The synonyms of `yes` are `on`, `true`, `OK`. The synonyms of `no` are `off`, `false`.

If a switch value contains spaces or tabs, the whole parameter should be put in quotation marks, for example:

```
"-home=c:\Program Files\DrWeb Server"
```

> (!) The names of switches can be abbreviated (by omitting the last letters), unless the abbreviated name is to coincide with the beginning of any other switch.

H2. Network Installer

The start instruction format

```
drwinst.exe [<switches>]
```

Switches

> (!) Command line switches are valid for launching all types of Agent installation files.

Switches to launch the Agent network installer are specified in the following format: /*<switch>* *<parameter>*.

All parameters values are specified after the space. For example:

```
/silent yes
```

If a switch value contains spaces, tabs or the / symbol, the whole parameter should be put in quotation marks. For example:

```
/pubkey "C:\my folder\drwcsd-certificate.pem"
```

Allowed switches

- `/compression` *<mode>*—compression mode of the traffic with the Server. The *<mode>* parameter may take one of the following values:

  - `yes`—use compression.

  - `no`—do not use compression.

  - `possible`—compression is possible. The final decision is defined depending on settings on the Server side.

  If the switch is not set, the `possible` value is used by default.

- `/encryption` *<mode>*—encryption mode of the traffic with the Server. The *<mode>* parameter may take one of the following values:

  - `yes`—use encryption.

  - `no`—do not use encryption.

  - `possible`—encryption is possible. The final decision is defined depending on settings on the Server side.

  If the switch is not set, the `possible` value is used by default.

- `/excludeFeatures` *<components>*—the list of components, which must be excluded from installation on the station. To set several components, use the "`,`" sign as a divider. Available components:

  - `scanner`—Dr.Web Scanner,

  - `spider-mail`—SpIDer Mail,

  - `spider-g3`—SpIDer Guard,

  - `outlook-plugin`—Dr.Web for Microsoft Outlook,

  - `firewall`—Dr.Web Firewall,

  - `spider-gate`—SpIDer Gate,

  - `parental-control`—Office Control,

  - `antispam-outlook`—Dr.Web Anti-spam for Dr.Web for Microsoft Outlook component.

  - `antispam-spidermail`—Dr.Web Anti-spam for SpIDer Mail component.

  Components that are not set directly, save their default installation status.

- `/id` *<station_id>*—identifier of a station on which the Agent will be installed.

  The switch is specifying with the `/pwd` switch for automatic authorization on the Server. If authorization parameters are not set, authorization decision is defined on the Server side.

- `/includeFeatures` *<components>*—the list of components, which must be installed on the station. To set several components, use the "`,`" sign as a divider. Available components:

  - `scanner`—Dr.Web Scanner,

  - `spider-mail`—SpIDer Mail,

  - `spider-g3`—SpIDer Guard,

  - `outlook-plugin`—Dr.Web for Microsoft Outlook,

- `firewall`—Dr.Web Firewall,
- `spider-gate`—SpIDer Gate,
- `parental-control`—Office Control,
- `antispam-outlook`—Dr.Web Anti-spam for Dr.Web for Microsoft Outlook component.
- `antispam-spidermail`—Dr.Web Anti-spam for SpIDer Mail component.

Components that are not set directly, save their default installation status.

- `/installdir` *<folder>*—installation folder.

  If the switch is not set, default installation folder is the "`Program Files\DrWeb`" folder on the system drive.

- `/installtimeout` *<time>*—waiting limit of reply from a station during the remote installation launched in the Control Center. Defined in seconds.

  If the switch is not set, 300 seconds are used by default.

- `/instMode` *<mode>*—installer launch mode. The *<mode>* parameter may take the following value:

  - `remove`—remove the installed product.

  If the switch is not set, by default installer automatically defines the launch mode.

- `/lang` *<language_code>*—installer language. Use the ISO-639-1 format to specify the language code.

  If the switch is not set, the system language is used by default.

- `/pubkey` *<certificate>*—full path to the Server certificate.

  If the certificate is not set, after the launch of the local installation, installer automatically uses the `*.pem` certificate file from own launch folder. If the certificate file is located in the folder other than the installer launch folder, you must manually specify the full path to the certificate file.

  If you launch the installation package generated in the Control Center, the certificate is included into the installation package and additional specifying of the certificate file in the command line switches is not required.

- `/pwd` *<password>*—the Agent password to access the Server.

  The switch is specifying with the `/id` switch for automatic authorization on the Server. If authorization parameters are not set, authorization decision is defined on the Server side.

- `/regagent` *<mode>*—defines whether the Agent will be registered in the list of installed programs. The *<mode>* parameter may take one of the following values:

  - `yes`—register the Agent in the list of installed programs.
  - `no`—do not register the Agent in the list of installed programs.

  If the switch is not set, the `no` value is used by default.

- `/retry` *<number>*—number of attempts to locate the Server by sending multicast requests. If the Server has not responded after the specified attempts number is reached, it is assumed what the Server is not found.

  If the switch is not set, 3 attempts to find the Server is performed.

- `/server` [*<protocol>*/]*<server_address>*[`:`*<port>*]—the Server address from which the Agent installation will be performed and to which the Agent connects after the installation.

  If the switch is not set, by default the Server is searched by sending multicast requests.

- `/silent` *<mode>*—defines whether the installer will be run in the background mode. The *<mode>* parameter may take one of the following values:

  - `yes`—launch the installer in the background mode.

  - `no`—launch the installer in the graphical mode.

  If the switch is not set, by default the Agent installation performs in the graphical mode of the installer (see the **Installation Manual**, p. Installing Dr.Web Agent via the Installer).

- `/timeout` *<time>*—waiting limit of each reply when searching the Server. Defined in seconds. Receiving of response messages continues while the response time is less than the timeout value.

  If the switch is not set, 3 seconds are used by default.

H3. Dr.Web Agent for Windows®

The start instruction format

`es-service.exe` [*<switches>*]

Switches

Each switch may be set in one of the following formats (formats are equivalent):

-*<short_switch>*[*<argument>*]

or

--*<long_switch>*[=*<argument>*]

Switches may be used simultaneously including short and long versions.

> ⚠️ If an argument contains spaces, it must be enclosed in quotes.
>
> ---
>
> All switches can be executed not dependently on permissions granted for the station on the Server. I.e. even if permissions to change the Agent settings are denied on the Server, you can change these settings via the command line switches.

Allowed switches

- Show help:
  - `-?`
  - `--help`

- Change address of the Server to which the Agent connects:

  - `-e` *<Server>*

  - `--esserver=`*<Server>*

  To set several Servers at a time, you must repeat via the space character the `-e` switch for each Server address, e.g.:

  ```
  es-service -e 192.168.1.1:12345 -e 192.168.1.2:12345 -e 10.10.1.1:1223
  ```

  or

  ```
  es-service --esserver=10.3.1.1:123 --esserver=10.3.1.2:123 --esserver=10.10.1.1:123
  ```

- Add the public encryption key:

  - `-p` *<key>*

  - `--addpubkey=`*<key>*

  Public key specified as an argument is copied to the Agent folder (the `%ProgramFiles%\DrWeb` folder by default), is renamed to `drwcsd.pub` (if the name differs) and reread by the service. At this, previous public key file, if presented, is renamed to `drwcsd.pub.old` and no longer used.

  All public keys which were used previously (keys transmitted from the Server and stored in the registry) are remained and used.

- Add the Server certificate:

  - `-c` *<certificate>*

  - `--addcert=`*<certificate>*

  Server certificate file specified as an argument is copied to the Agent folder (the `%ProgramFiles%\DrWeb` folder by default), is renamed to `drwcsd-certificate.pem` (if the name differs) and reread by the service. At this, previous certificate file, if presented, is renamed to `drwcsd-certificate.pem.old` and no longer used.

  All certificates which were used previously (certificates transmitted from the Server and stored in the registry) are remained and used.

- Change the Agent log level of detail:

  - `-l` *<level>*

  - `--loglevel=`*<level>*

  Allowed values of log details level: `err`, `wrn`, `inf`, `dbg`.

H4. Dr.Web Server

There are several variants as how to launch the Server. These variants will be described separately.

Commands described in p. <u>H4.1. Managing Dr.Web Server</u>—<u>H4.5. Backup of Dr.Web Server Critical Data</u> are crossplatform and enable using in both Windows OS and UNIX system-based OS, unless it is specified otherwise.

> ⊘ If an error occurred while launching the Server management commands, please refer to the Server log file to find possible causes (see **Administrator Manual**, p. <u>Dr.Web Server Log</u>).

H4.1. Managing Dr.Web Server

`drwcsd [<switches>]`—set the parameters for the Server operation (the switches are described in more detail below).

H4.2. Basic Commands

- `drwcsd reconfigure`—reread and reboot the configuration file (it is performed quicker and without starting a new process).
- `drwcsd restart`—restart the Server (it is executed as the `stop` and then `start` pair).
- `drwcsd start`—run the Server.
- `drwcsd stop`—stop the Server.
- `drwcsd stat`—log statistics to a file: CPU time, memory usage, etc. (for UNIX system-based OS—similar to `send_signal WINCH` or `kill SIGWINCH` commands).
- `drwcsd verifyakey <full_key_filename>`—verify the license key file (`agent.key`).
- `drwcsd verifyekey <full_key_filename>`— verify the Server license key file (`enterprise.key`). Please note that the Server license key file is no longer used from the version 10.
- `drwcsd verifyconfig <full_config_filename>`—verify the syntax of the Server configuration file (`drwcsd.conf`).

H4.3. Database Commands

Database Initialization

> ⚠ For initialization, the database must be absent or empty.

`drwcsd [<switches>] initdb [<license_key>|- [<sql_script>|- [<ini_file>|-[<password> [<lua_script>|-]]]]]`—database initialization.

- *<license_key>*—path to Dr.Web license key file `agent.key`. If the license key is not specified, it must be added later from the Control Center or get from the neighbor Server via the interserver connection.

- *<sql_script>*—path to the sql script for initialization of the DB physical structure.
- *<ini_file>*—previously formed file in the `drweb32.ini` format, to set the initial configuration of Dr.Web software components (i.e. for the **Everyone** group).
- *<password>*—original password of the Server administrator (the name is **admin**). Default password is **root**.
- *<lua-lua_script>*—path to the lua script for the DB initialization (filling the base with defaults).

> ⚠ The "-" (minus) special value means not to use this parameter.
>
> A minus can be omitted, if the next parameters are not set.

Adjusting parameters of database initialization

If embedded database is used, initialization parameters can be set via an external file. The following command is used for this:

`drwcsd.exe initdbex` *<response-file>*

<response-file>—file with initialization parameters written line-by-line in the same order same as parameters of the `initdb` command.

File format:

> *<full_license_key_filename>*
>
> *<full_sql_script_filename>*
>
> *<full_ini_file_filename>*
>
> *<administrator_password>*

> ⚠ When using a response file under Windows OS, any symbols are allowed in the administrator password.

Any strings following the necessary parameter in a particular case are optional. If a string consists of only the minus symbol "-", the default value is used (as in `initdb`).

Database Updating

`drwcsd [`*<switches>*`] updatedb` *<script>*—perform any action with the database (for example, update to a new version) by executing SQL or LUA script from the specified file.

Database Upgrading

`drwcsd upgradedb [`*`<folder>`*`]`—run the Server to upgrade the structure of the database to a new version from the specified folder (see the `update-db` folder) or using the internal scripts.

Database Export

a) `drwcsd exportdb` *`<file>`*—export the database to the specified file.

Example for Windows OS:

```
C:\Program Files\DrWeb Server\bin\drwcsd.exe -home="C:\Program Files\DrWeb
Server" -var-root="C:\Program Files\DrWeb Server\var" -verbosity=all
exportdb "C:\Program Files\DrWeb Server\esbase.es"
```

Under **UNIX** system-based OS, the action is performed on behalf of the `drwcs:drwcs` user to the `$DRWCS_VAR` directory (except **FreeBSD** OS, which by default saves the file to the directory from which the script was run; if the path is specified explicitly, then the directory should have the write access for the *<user>*:*<group>* that had been created at installation, by default it is `drwcs:drwcs`).

b) `drwcsd xmlexportdb` *`<xml_file>`*—export the database to the specified xml file.

If you specify the `gz` file extension, when during the export, database file will be packed into the `gzip` archive.

If you do not specify any extension or specify an extension other than `gz`, when export file will not be archived.

Example for Windows OS:

- To export the database into the xml file with no compression:

```
"C:\Program Files\DrWeb Server\bin\drwcsd.exe" "-home=C:\Program
Files\DrWeb Server" "-bin-root=C:\Program Files\DrWeb Server" "-var-
root=C:\Program Files\DrWeb Server\var" -verbosity=ALL -rotate=10,10m -
log=export.log xmlexportdb database.db
```

- To export the database into the xml file compressed to an archive:

```
"C:\Program Files\DrWeb Server\bin\drwcsd.exe" "-home=C:\Program
Files\DrWeb Server" "-bin-root=C:\Program Files\DrWeb Server" "-var-
root=C:\Program Files\DrWeb Server\var" -verbosity=ALL -rotate=10,10m -
log=export.log xmlexportdb database.gz
```

Example for UNIX system-based OS:

- To export the database into the xml file with no compression:

```
/etc/init.d/drwcsd xmlexportdb /test/database.db
```

- To export the database into the xml file compressed to an archive:

```
/etc/init.d/drwcsd xmlexportdb /es/database.gz
```

Database Import

a) `drwcsd importdb` *<file>*—import the database from the specified file (the previous content of the database is deleted).

b) `drwcsd upimportdb` *<file>* [*<folder>*]—import and upgrade the database exported from the Server of previous version (the previous content of the database is deleted). Also you can specify the path to the folder with scripts to upgrade the structure of the database to a new version (same as in the `upgradedb` command).

c) `drwcsd xmlimportdb` *<xml_file>*—import the database from the specified xml file.

d) `drwcsd xmlupimportdb` *<xml_file>*—import and upgrade the database exported in xml from the Server of previous version. Also you can specify the path to the folder with scripts to upgrade the structure of the database to a new version (same as in the `upgradedb` command).

e) `drwcsd xmlimportdbnh` *<xml_file>*—import the database from the specified xml file not considering the hash. Can be used e.g., if the database xml file has been edited manually and the file hash that is written automatically during the export, is no longer valid.

> ⚠️ Before using the `upimportdb` and `xmlupimportdb` commands, you must back up the database.
>
> Any problems during execution of these commands may lead to deletion of all information from the database.
>
> ───────────────────────────────────
>
> You can use the `upimportdb` and `xmlupimportdb` commands to import and upgrade the version of the database only within the same DBMS.

Database dump export

`drwcsd` [*<switches>*] `dumpimportdb` *<DB_file>* [*<SQL_file>* [*<tables_filter>*]]—write to the Server log file or to the SQL file detailed information on embedded or external database.

> ⓘ Import and export of the database is not performed during the `dumpimportdb` command execution.

- *<DB_file>*—export file of the database, information on which will be written to the Server log file or to the *<SQL_file>*. Export file can be get via the `exportdb` command; also you can use the file from the backup copy of the database. XML file after the `xmlexportdb` command is not allowed.

- *<SQL_file>*—*file* to write all SQL queries that will be executed during the database import from the file specified in the *<DB_file>*. If SQL file is not specified, the data will be written to

the Server log file (as a list of tables and their fields). If the file is specified, only the queries to the SQL file will be written.

- *<tables_filter>*—the list of database tables, information on which will be written into the *<SQL_file>*. The tables in the list must be separated with comma. The names must correspond the names of the database tables. For example: `admins,groups,stations`. Tables filter is applied for SQL file output only. If the tables list is not specified, all tables are written.

Database Verification

`drwcsd verifydb`—run the Server to check the database. After completion, the Server saves the verification results in the log file (`drwcsd.log` by default).

Database Speed Up

`drwcsd [<switches>] speedupdb`—execute the `VACUUM`, `CLUSTER`, `ANALYZE` commands to speed up the DB operation.

Database Restore

`drwcsd repairdb`—repair malformed disk image of **SQLite3** embedded database or corrupted tables of **MySQL** external database.

SQLite3 may be also automatically recovered on the Server startup if in the **SQLite3** database settings in the Control Center, the **Restore corrupted image automatically** flag is set (see **Administrator Manual**, p. Database Restore).

Database cleanup

`drwcsd cleandb`—cleanup database of the Server by deleting all database tables.

H4.4. Repository Commands

> ⚠ You must necessarily stop the Server before launching the `syncrepository`, `restorerepo` and `saverepo` commands.

- `drwcsd syncrepository`—synchronize the repository with Dr.Web GUS. The command launches the Server process, at this, GUS is called with the following repository update if updates are present.
- `drwcsd rerepository`—reread the repository from the drive. Under UNIX system base OS, similar to the `readrepo` command.
- `drwcsd updrepository`—update the repository from Dr.Web GUS. The command sends the signal to the operating Server process to call the GUS and perform the following

repository update if updates are present. If the Server is not running, the repository update is not performed.

- `drwcsd [<switches>] restorerepo <full_archive_name>`—restore repository of the Server from the specified zip archive created via the `saverepo` command.

- `drwcsd [<switches>] saverepo <full_archive_name>`—save all repository of the Server to the specified zip archive. Created archive can be imported to the Server via the `restorerepo` command.

> Archives used by the `restorerepo` and `saverepo` commands are not compatible with archives used for repository export and import via the Control Center.

H4.5. Backup of Dr.Web Server Critical Data

The following command creates backup copies of critical Server data (license keys, database contents, encryption private key, Server configuration and Control Center configuration):

`drwcsd –home=<path> backup [<directory> [<quantity>]]`

- Copy critical Server data to the specified *<directory>*.
- The `–home` switch sets the Server installation folder.
- *<quantity>* is the number of copies of each file.

Example for Windows OS:

```
C:\Program Files\DrWeb Server\bin>drwcsd –home="C:\Program Files\DrWeb
Server" backup C:\a
```

All files in the backup except the database contents, are ready to use. The database backup copy is stored in the `.gz` format compatible with `gzip` and other archivers. The database contents can be imported from the backup copy to another database of the Server, thus restore the data (see p. Restoring the Database of Dr.Web Enterprise Security Suite).

During the operation, Dr.Web Server regularly stores backup copies of important information into the following folders:

- for **Windows** OS: *<installation_drive>*`:\DrWeb Backup`
- for **Linux** OS: `/var/opt/drwcs/backup`
- for **FreeBSD**: `/var/drwcs/backup`

To perform the back up, a daily task is included into the Server schedule. If such task is missing in the schedule, it is recommended to create it.

H4.6. Commands for Windows® OS Only

- `drwcsd [<switches>] install [<service_name>]`—install the Server service in the system and assign specified switches to launch this service.

  <service_name> is a suffix that is added to the default name of the service; at this, the full name of the service is `DrWebES-<service_name>`. The `install` command creates (edits) the service with specified name and automatically adds the `-service=<service_name>` switch into its arguments. At this, existing services remain unchanged.

- `drwcsd uninstall [<service_name>]`—uninstall the Server service from a system.

  <service_name> is a suffix that is added to the default name of the service; at this, the full name of the service is `DrWebES-<service_name>`.

- `drwcsd kill`—perform emergency shutdown of the Server service (if normal termination failed). This instruction should not be used without extreme necessity.

- `drwcsd silent [<options>] <command>`—disable messages from the Server when launching the *<command>*. Used particularly in command files to disable Server interactivity.

- `drwcsd syncads`—synchronize network structures: Active Directory containers which contains computers become groups of anti-virus network to which workstations are placed.

H4.7. Commands for UNIX® System-Based OS Only

- `drwcsd config`—similar to `reconfigure` or `kill SIGHUP` commands—restart the Server.

- `drwcsd interactive`—run the Server but do not direct the control to the process.

- `drwcsd newkey`—generate a new encryption keys `drwcsd.pri` and `drwcsd.pub` and the `drwcsd-certificate.pem` certificate.

- `drwcsd readrepo`—reread repository from the drive. Similar to the `rerepository` command.

- `drwcsd selfcert[<hostname>]`—generate a new SSL certificate (`certificate.pem`) and RSA private key (`private-key.pem`). The parameter specifies the host name with the Server installed for which the files are generated. If the name is not specified, it will be gotten automatically by a system function.

- `drwcsd shell <file_name>`—run the script file. The command launches `$SHELL` or `/bin/sh` and passes the specified file.

- `drwcsd showpath`—show all program paths, registered in the system.

- `drwcsd status`—show the current status of the Server (running, stopped).

H4.8. The Description of Switches

Crossplatform Switches

- `-activation-key=<license_key>`—Server license key. By default, it is the `enterprise.key` file located in the etc subfolder of the root folder.

Please note that the Server license key file is no longer used from the version 10. The `-activation-key` switch may be used during the Server upgrade from the previous versions and database initialization: the Server identifier will be taken from the specified licence key.

- `-bin-root=<`*folder_for_executables*`>`—the path to executable files. By default, it is the `bin` subfolder of the root folder.

- `-conf=<`*configuration_file*`>`—name and location of the Server configuration file. By default, it is the `drwcsd.conf` file in the `etc` subfolder of the root folder.

- `-daemon`—for Windows platforms it means to launch as a service; for UNIX platforms —"daemonization of the process" (to go to the root folder, disconnect from the terminal and operate in the background).

- `-db-verify=on`—check database integrity at Server start. This is the default value. It is not recommended to run with an explicit opposite value, except if run immediately after the database is checked by the `drwcsd verifydb` instruction, see above.

- `-help`—displays help. Similar to the programs described above.

- `-hooks`—to permit the Server to perform user extension scripts located in the:

  - for Windows OS: `var\extensions`

  - for FreeBSD OS: `/var/drwcs/extensions`

  - for Linux OS: `/var/opt/drwcs/extensions`

  subfolder of the Server installation folder. The scripts are meant for automation of the administrator work enabling quicker performance of certain tasks. All scripts are disabled by default.

- `-home=<`*root*`>`—Server installation folder (root folder). The structure of this folder is described in **Installation Manual**, p. [Installing Dr.Web Server for Windows® OS](#). By default, it is the current folder at start.

- `-log=<`*log*`>`—Server log filename. A minus can be used instead of the filename (for Servers under UNIX OS only), which instructs standard output of the log. By default: for Windows platforms it is `drwcsd.log` in the folder specified by the `-var-root` switch, for UNIX platforms it is set by the `-syslog=user switch` (read below).

- `-private-key=<`*private_key*`>`—private Server key. By default, it is `drwcsd.pri` in the `etc` subfolder of the root folder.

- `-rotate=<N><f>,<M><u>`—Server log rotation mode, where:

Parameter	Description
<N>	Total number of log files (including current and archive).
<f>	Log files storing format, possible values: • z (gzip)—compress files, used by default, • p (plain)—do not compress files.
<M>	Log file size or rotation time, depending on the *<u>* value;
<u>	Unit measure, possible values:

Parameter	Description

	- to set rotation by log file size:
	   □ k—Kb,
	   □ m—Mb,
	   □ g—Gb.
	- to set rotation by time:
	   □ H—hours,
	   □ D—days,
	   □ W—weeks.

> ⚠ If rotation by time is set, synchronisation performs independently on command launch time: the H value means synchronisation with the beginning of an hour, D—with beginning of a day, W—with beginning of a week (00:00 on Monday) according to the multiplicity specified in the *<u>* parameter.
>
> Initial reference point—January 01, year 01 AD, UTC+0.

By default, it is `10,10m`, which means storing of 10 files 10 megabytes each, use compression. Alternatively you can use the none format (`-rotate=none`), which means "do not use rotation, always write to the same file of unlimited size".

In the rotation mode, log file names are generated as follows: `file.<N>.log` or `file.<N>.log.gz`, where *<N>*—sequence number: 1, 2, etc.

For example, the log file name is set to `file.log` (see the `-log` switch above), then

□ `file.log`—current log file,

□ `file.1.log`—previous log file,

□ `file.2.log` and so on—the greater the number, the older the version of the log.

- `-trace`—to log in detail the location of error origin.

- `-var-root=<folder_for_modified>`—path to a folder to which the Server has a write access and which is designed to store modified files (for example, logs and the repository files). By default, it is the `var` subfolder of the root folder.

- `-verbosity=<details_level>`—log level of detail. `WARNING` is by default. Allowed values are: `ALL`, `DEBUG3`, `DEBUG2`, `DEBUG1`, `DEBUG`, `TRACE3`, `TRACE2`, `TRACE1`, `TRACE`, `INFO`, `NOTICE`, `WARNING`, `ERROR`, `CRIT`. The `ALL` and `DEBUG3` values are synonyms (see also Appendix K. Log Files Format).

> ⚠ This key defines the log level of detail set by the subsequent `-log` key (read above). One instruction can contain several switches of this type.
>
> ___
>
> The `-verbosity` and `-log` switches are position-relative.

> In case of using these keys simultaneously, the `-verbosity` switch must be set before the `-log` switch: the `-verbosity` switch redefines detail level of logs, that reside in folder, specified in the following switch.

Switches for Windows OS Only

- `-minimized`—(if run not as a service, but in the interactive mode)—minimize a window.

- `-screen-size=<size>`—(if run not as a service, but in the interactive mode)—log size in lines displayed in the Server screen, the default value is 1000.

- `-service=<service_name>`—the switch is used by running service process for self-identification and activation of the self-protection for the registry branch of the Server service. *<service_name>* is a suffix that is added to the default name of the service; at this, the full name of the service is `DrWebES-<service_name>`.

  The switch is used by the `install` command; independent use is not provided.

Switches for UNIX system-based OS Only

- `-etc=<path>`—path to the `etc` (`<var>/etc`) directory.

- `-pid=<file>`—a file to which the Server writes the identifier of its process.

- `-syslog=<mode>`—instructs logging to the system log. Possible modes: `auth`, `cron`, `daemon`, `kern`, `lpr`, `mail`, `news`, `syslog`, `user`, `uucp`, `local0`—`local7` and for some platforms—`ftp`, `authpriv`.

> ⚠ The `-syslog` and `-log` keys work together. I.e., if you start the Server with the `-syslog` key (e.g., `service drwcsd start -syslog=user`), the Server run with specified value for the `-syslog` key and with default value for the `-log` key.

- `-user=<user>`, `-group=<group>`—available for UNIX OS only, if run by the root user; it means to change the user or the group of process and to be executed with the permissions of the specified user (or group).

H4.9. Variables for UNIX® System-Based OS Only

To make the administration of the Server under UNIX system-based OS easier, administrator is provided with variables which reside in the script file stored in the following folder:

- For Linux OS: `/etc/init.d/drwcsd`.

- For FreeBSD OS: `/usr/local/etc/rc.d/drwcsd` (symbolic link to the `/usr/local/etc/drweb.com/software/init.d/drwcsd`).

Correspondence between variables and command switches for the `drwcsd` is described in the Table H-1.

Table H-1.

Switch	Variable	Default parameters
-home	DRWCS_HOME	• `/usr/local/drwcs`—for FreeBSD OS, • `/opt/drwcs`—for Linux OS.
-var-root	DRWCS_VAR	• `/var/drwcs`—for FreeBSD OS, • `/var/opt/drwcs`—for Linux OS.
-etc	DRWCS_ETC	$DRWCS_VAR/etc
-rotate	DRWCS_ROT	10,10m
-verbosity	DRWCS_LEV	trace3
-log	DRWCS_LOG	$DRWCS_VAR/log/drwcsd.log
-conf	DRWCS_CFG	$DRWCS_ETC/drwcsd.conf
-pid	DRWCS_PID	
-user	DRWCS_USER	
-group	DRWCS_GROUP	
-hooks	DRWCS_HOOKS	
-trace	DRWCS_TRACE	

> `DRWCS_HOOKS` and `DRWCS_TRACE` variables do not have any parameters. If variables have been defined, corresponding switches will be added during the script execution. If variables have not been defined, switches will not be added.

Other variables are described in the Table H-2.

Table H-2.

Variables	Default parameters	Description
DRWCS_ADDOPT		
DRWCS_CORE	unlimited	The core file maximal size.
DRWCS_FILES	8192	The maximal number of file descriptors, that the Server is able to open.
DRWCS_BIN	$DRWCS_HOME/bin	The directory to start the `drwcsd` from.

Variables	Default parameters	Description
DRWCS_LIB	$DRWCS_HOME/lib	The directory with Server libraries.

Default values of parameters will be used, if these variables have not been defined in the `drwcsd` script.

> (!) `DRWCS_HOME, DRWCS_VAR, DRWCS_ETC, DRWCS_USER, DRWCS_GROUP, DRWCS_HOOKS` variables are already defined in the `drwcsd` script file.
>
> If the `${TGT_ES_ETC}/common.conf` file exists, this file will be included to the `drwcsd`, that could redefine some variables, but if they are not exported (using the `export` command), they will not take any effect.

To set variables, do the following:

1. Add variable definition to the `drwcsd` script file.
2. Export this variable using the `export` command (at the same place).
3. When one more process will be run from this script, this process will read values that have been set.

H5. Administration of Dr.Web Server Version for UNIX® OS with the kill Instruction

The version of the Server for UNIX OS is administrated by the signals sent to the Server processor by the `kill` utility.

> (!) Use the `man kill` instruction to receive help on the `kill` utility.

Below are listed the utility signals and the actions performed by them:

- `SIGWINCH`—log statistics to a file (CPU time, memory usage, etc.),
- `SIGUSR1`—reread the repository from the drive,
- `SIGUSR2`—reread templates from the drive,
- `SIGHUP`—restart the Server,
- `SIGTERM`—shut down the Server,
- `SIGQUIT`—shut down the Server,
- `SIGINT`—shut down the Server.

Similar actions are performed by the switches of the drwcsd instruction for the Windows version of the Server, read Appendix H4.3. Database Commands.

H6. Dr.Web Scanner for Windows®

This component of the workstation software has the command line parameters which are described in the **Dr.Web® Agent for Windows** User Manual. The only difference is that when the Scanner is run by the Agent, the `/go /st` parameters are sent to the Server automatically and without fail.

H7. Dr.Web Proxy Server

To configure the Proxy server parameters, run with corresponding switches the `drwcsd-proxy` executable file, which resides in the `bin` subdirectory of the Proxy server installation directory.

The Start Instruction Format

`drwcsd-proxy` [*<switches>*] [*<commands>*] [*<command_arguments>*]

Allowed Switches

Crossplatform Switches

- `--console=yes|no`—run the Proxy server in the interactive mode. At this, the Proxy server operation log is written to the console.

  Default: `no`.

- `--etc-root=`*<path>*—path to the configuration files directory (`drwcsd-proxy.conf`, `drwcsd.proxy.auth` and etc.).

  Default: `$var/etc`

- `--home=`*<path>*—path to the Proxy server installation directory.

  Default: `$exe-dir/`

- `--log-root=`*<path>*—path to the directory with the Proxy server operation log files.

  Default: `$var/log`

- `--pool-size=`*<N>*—pool size for clients connections.

  Default: core number of the computer with the Proxy server installed (not less than 2).

- `--rotate=`*<N><f>*,*<M><u>*—Proxy server log rotation mode, where:

Parameter	Description
<N>	Total number of log files (including current and archive).
<f>	Log files storing format, possible values: • z (gzip)—compress files, used by default, • p (plain)—do not compress files.

Parameter	Description
<M>	Log file size or rotation time, depending on the <u> value;
<u>	Unit measure, possible values: • to set rotation by log file size: ▫ k—Kb, ▫ m—Mb, ▫ g—Gb. • to set rotation by time: ▫ H—hours, ▫ D—days, ▫ W—weeks.

> If rotation by time is set, synchronisation performs independently on command launch time: the H value means synchronisation with the beginning of an hour, D—with beginning of a day, W—with beginning of a week (00:00 on Monday) according to the multiplicity specified in the *<u>* parameter.
>
> Initial reference point—January 01, year 01 AD, UTC+0.

Default is `10,10m`, which means storing of 10 files of 10 megabytes each, use compression.

- `--trace=yes|no`—enable detailed logging of Proxy server calls. Available only if the Proxy server supports calls stack tracing (if an exception occurs, stack is written to the log).

  Default: `no`.

- `--tmp-root=<`*path*`>`—path to the temporary files directory. Is used at Proxy server automatic update.

  Default: `$var/tmp`.

- `--var-root=<`*path*`>`—path to the Proxy server working directory to store cache and database.

  Default:

  ▫ Windows OS: `%ALLUSERSPROFILE%\Doctor Web\drwcs`

  ▫ Linux OS: `/var/opt/drwcs`

  ▫ FreeBSD OS: `/var/drwcs`

- `--verbosity=<`*details_level*`>`—log details level. Default is `TRACE`. Allowed values are: `ALL, DEBUG3, DEBUG2, DEBUG1, DEBUG, TRACE3, TRACE2, TRACE1, TRACE, INFO, NOTICE, WARNING, ERROR, CRIT`. The `ALL` and `DEBUG3` values are synonyms.

> All switches for setting Proxy server parameters can be set simultaneously.

Switches for UNIX system-based OS

- `--user`—set the user identifier. The switch is relevant for both, normal and daemon modes.
- `--group`—set the group identifier. The switch is relevant for both, normal and daemon modes.

Allowed Commands and their Arguments

> ! If the command is not specified, the `run` command is used.

- `import` *<path>* [*<revision>*] [*<products>*]—import files from Dr.Web Server repository to the Proxy server cache.
  - *<path>*—path to the directory with Dr.Web Server repository. The Server repository must be preliminary downloaded to the computer with the Proxy server installed.
  - *<revision>*—maximum number of revisions to import. If the value is not set, all revision will be imported.
  - *<products>*—the list of products divided by the space that are intended to import. By default, the list is empty, i.e. import all repository products except Dr.Web Server. If the list is set, only the products from the list will be imported.
- `help`—show help message on switches for Proxy server configuration.
- `run`—start the Proxy server in normal mode.

For Windows OS only

- `install`—install the service.
- `uninstall`—uninstall the service.
- `start`—start the installed service.
- `stop`—stop the started service.

For UNIX system-based OS only

- `daemon`—run the Proxy server as a daemon (see also Switches for UNIX system-based OS).

H8. Dr.Web Server Installer for UNIX® System-Based OS

The start instruction format

<package_name>`.run` [*<switches>*] [`--`] [*<arguments>*]

where:

- `[--]`—separate optional sign, determines the end of the switches list and separates the switches list and the additional arguments list.

- `[<arguments>]`—additional arguments or embedded scripts.

Switches to get help or information on the package

- `--help`—show the help on switches.

- `--info`—show extended information on the package: the name; destination folder; unpacked size; compression algorithm; compression date; the version of `makeself` which is used for packing; the command user for packing; the script that will be launched after unpacking; whether the archive content will be copied into the temporary folder or not (if no, nothing shown); whether the destination folder stored or will be deleted after the script execution.

- `--list`—show the list of files in the installation package.

- `--check`—check integrity of the installation package.

Switches to run the package

- `--confirm`—ask before running embedded script.

- `--noexec`—do not run embedded script.

- `--target` *<folder>*—extract the installation package to the specified folder.

- `--tar` *<argument_1>* `[`*<argument_2>* ...`]`—get access the contents of the installation package through the tar command.

Additional arguments

- `--help`—show the help on additional arguments.

- `--quiet`—run the installer in the background mode. The affirmative answer is used for all the following questions of the installer:

  - accept the license agreement,

  - set back up into the default folder,

  - continue the installation provided that extra distribution kit installed in the system will be deleted.

- `--clean`—install the package with Server default settings not using the backup to restore the settings from the previous installation.

- `--preseed` *<path>*—use the configuration file with predefined answers on installer questions during the installation.

  Where *<path>* is the path to the configuration file.

  Variables to specify the predefined answers in the configuration file:

  - `DEFAULT_BACKUP_DIR=`*<path>*—path to the backup that is used for restoring the settings from the previous version (is not used if you set the installation not applying restore from the backup).

- `QUITE_INSTALL=[0|1]`—defines the usage of the installer background mode:

  - 0—run the installer in the background mode;

  - 1—run the installer in the regular mode.

- `CLEAN_INSTALL=[0|1]`—defines the usage of backup during the installation:

  - 0—install not applying backup;

  - 1—install applying restore from the backup located in the folder from the `DEFAULT_BACKUP_DIR` variable. If the `DEFAULT_BACKUP_DIR` variable is not specified, backup is taken from the `/var/tmp/drwcs`.

> ⊙ If you use the `--preseed` argument and do not define the installer background mode in the configuration file via the `QUITE_INSTALL=0` variable, when the values of other variables of the configuration file will be redefined by a user during the installation.

H9. Utilities

H9.1. Digital Keys and Certificates Generation Utility

The following console versions of the digital keys and certificates generation utility are provided:

Executable file	Location	Description
`drweb-sign-<OS>-<bitness>`	Control Center, the **Administration → Utilities** section	Independent version of the utility. Can be launched from any directory or on any computer with corresponding operating system.
	The `webmin/utilities` Server directory	
`drwsign`	The `bin` Server directory	Utility version depends on server libraries. Can be launched only from its location directory.

> (!) The `drweb-sign-<OS>-<bitness>` and `drwsign` version of the utility are similar in their functions. Further in the section, the `drwsign` version is given, but all examples are relevant for both versions.

The start instruction format

- `drwsign check [-public-key=<public_key>] <file>`

  Check the specified file signature using a public key of a person who signed this file.

Switch parameter	Default value
<public_key>	`drwcsd.pub`

- `drwsign extract [-private-key=<private_key>] [-cert=<Server_certificate>] <public_key>`

  Extract the public key from the private key file or from the certificate and write the public key to the specified file.

  The `-private-key` and `-cert` switches are mutually exclusive, i.e. only one switch can be set; if both switches are set at the same time, the command with fail to execute.

  The switches parameter must be obligatory specified.

  If none of the switches is set, the `-private-key=drwcsd.pri` is used to extract the public key of the `drwcsd.pri` private key.

Switch parameter	Default value
<private_key>	`drwcsd.pri`

- `drwsign genkey` [*<private_key>* [*<public_key>*]]

Generate the public—private pair of keys and write them to the correspondent files.

Switch parameter	Default value
<private_key>	`drwcsd.pri`
<public_key>	`drwcsd.pub`

> ⚠️ The utility version for Windows platforms (in contrast to UNIX versions) does not protect private keys from copying.

- `drwsign gencert` [`-private-key=`*<private_key>*] [`-subj=`*<subject_fields>*] [`-days=`*<validity_period>*] [*<self_signed_certificate>*]

Generate self-signed certificate using the Server private key and write it to the corresponding file.

Switch parameter	Default value
<private_key>	`drwcsd.pri`
<subject_fields>	`/CN=`*<hostname>*
<validity_period>	`3560`
<self_signed_certificate>	`drwcsd-certificate.pem`

- `drwsign gencsr` [`-private-key=`*<private_key>*] [`-subj=`*<subject_fields>*] [*<certificate_sign_request>*]

Generate the request for the certificate sign basing on the private key and write this request into corresponding file.

Can be used to sing the certificate of other server, e.g. to sign the Proxy server certificate by the Dr.Web Server key.

To sign such request, use the `signcsr` switch.

Switch parameter	Default value
<private_key>	`drwcsd.pri`
<subject_fields>	`/CN=`*<hostname>*
<certificate_sign_request>	`drwcsd-certificate-sign-request.pem`

- `drwsign genselfsign [-show] [-subj=<subject_fields>] [-days=<validity_period>] [<private_key> [<self_signed_certificate>]]`

  Generate self-signed RSA certificate and RSA private key for a web server and write them into the corresponding files.

  The `-show` switch prints certificate content in a readable view.

Switch parameter	Default value
<subject_fields>	`/CN=<hostname>`
<validity_period>	`3560`
<private_key>	`private-key.pem`
<self_signed_certificate>	`certificate.pem`

- `drwsign hash-check [-public-key=<public_key>] <hash_file> <sign_file>`

  Check the sign of the specified 256-bit number in the client-server protocol format.

  In the *<hash-file>*, the file with 256-bit number to sing is specified. The *<sign_file>* is a sign result (two 256-bit numbers).

Switch parameter	Default value
<public_key>	`drwcsd.pub`

- `drwsign hash-sign [-private-key=<private_key>] <hash_file> <sign_file>`

  Sign the specified 256-bit number in the client-server protocol format.

  In the *<hash-file>*, the file with 256-bit number to sing is specified. The *<sign_file>* is a sign result (two 256-bit numbers).

Switch parameter	Default value
<private_key>	`drwcsd.pri`

- `drwsign help [<comand>]`

  Brief help on the program or on the specific command in the command line format.

- `drwsign sign [-private-key=<private_key>] <file>`

  Sign the *<file>* using the private key.

Switch parameter	Default value
<private_key>	`drwcsd.pri`

- `drwsign signcert [-ca-key=<private_key>] [-ca-cert=<Server_certificate>] [-cert=<certificate_to_sign>] [-days=<validity_period>] [<signed_certificate>]`

Sign the existing *<certificate_to_sign>* by the private key and the certificate of the Server. Signed certificate is saved into the separate file.

Can be used to sing the Proxy server certificate by the Dr.Web Server key.

Switch parameter	Default value
<private_key>	`drwcsd.pri`
<Server_certificate>	`drwcsd-ca-cerificate.pem`
<certificate_to_sign>	`drwcsd-certificate.pem`
<validity_period>	`3560`
<signed_certificate>	`drwcsd-signed-certificate.pem`

- `drwsign signcsr` [`-ca-key=`*<private_key>*] [`-ca-cert=`*<Server_certificate>*] [`-csr=`*<certificate_sign_request>*] [`-days=`*<validity_period>*] [*<signed_certificate>*]

Sign the *<certificate_sign_request>* generated by the `gencsr` command, using the private key and the certificate of the Server. Signed certificate is saved into the separate file.

Can be used to sing the certificate of other server, e.g. to sign the Proxy server certificate by the Dr.Web Server key.

Switch parameter	Default value
<private_key>	`drwcsd.pri`
<Server_certificate>	`drwcsd-cerificate.pem`
<certificate_sign_request>	`drwcsd-certificate-sign-request.pem`
<validity_period>	`3560`
<signed_certificate>	`drwcsd-signed-certificate.pem`

- `drwsign tlsticketkey` [*<TLS_ticket>*]

Generate TLS_ticket.

Can be used in the Servers cluster for shared TLS sessions.

Switch parameter	Default value
<TLS_ticket>	`tickets-key.bin`

- `drwsign verify` [`-ss-cert`] [`-CAfile=`*<Server_certificate>*] [*<certificate_to_check>*]

Validate certificate by trusted certificate of the Server.

The `-ss-cert` switch prescribes to ignore the trusted certificate and validate self-signed certificate only.

Switch parameter	Default value
<Server_certificate>	`drwcsd-certificate.pem`
<certificate_to_check>	`drwcsd-signed-certificate.pem`

- `drwsign x509dump [`*<certificate_to_print>*`]`

  Print the dump of any x509 certificate.

Switch parameter	Default value
<certificate_to_print>	`drwcsd-certificate.pem`

H9.2. Administrating Utility of the Embedded Database

The following utility of embedded DB management are provided:

- `drwidbsh`—for the IntDB database,
- `drwidbsh3`—for the SQLite3 database.

Utilities reside in the following folders:

- for **Linux** OS: `/opt/drwcs/bin`
- for **FreeBSD** OS: `/usr/local/drwcs/bin`
- for **Windows** OS: *<Server_installation_folder>*`\bin`

  (by default, the Server installation folder is: `C:\Program Files\DrWeb Server`).

The start instruction format

`drwidbsh` *<full_DB_filename>*

or

`drwidbsh3` *<full_DB_filename>*

The program operates in the text dialog mode; it waits for instructions from a user (the instructions begin with a period).

To receive help on other instructions, type `.help`.

For more information, use reference manuals on the SQL language.

H9.3. Dr.Web Server Remote Diagnostics Utility

Dr.Web Server remote diagnostics utility allows remotely connect to Dr.Web Server for basic controlling and viewing the operation statistics. Graphical version of the utility is available for Windows OS only.

You can download the utility via the Control Center, the **Administration** item in the main menu, the **Utilities** item in the control menu:

- For Windows OS—graphical version.
- For UNIX system-based OS—console version.

The following versions of Dr.Web Server remote diagnostics utility are provided:

Executable file	Location	Description
`drweb-cntl-<OS>-<bitness>`	Control Center, the **Administration → Utilities** section	Independent version of the utility. Can be launched from any directory or on any computer with corresponding operating system.
	The `webmin/utilities` Server directory	
`drwcntl`	The `bin` Server directory	Utility version depends on server libraries. Can be launched only from its location directory.

> The `drweb-cntl-<OS>-<bitness>` and `drwcntl` version of the utility are similar in their functions. Further in the section, the `drwcntl` version is given, but all examples are relevant for both versions.

> For connection of the Server remote diagnostics utility, you must enable Dr.Web Server FrontDoor extension. To do this, in the **Dr.Web Server configuration** section, on the **Modules** tab, set the **Dr.Web Server FrontDoor extension** flag.
>
> For connection of the Server remote diagnostics utility, administrator that connects via the utility, must have the **Use additional features** permission. Otherwise, access to the Server via the remote diagnostics utility will be forbidden.
>
> For connection of the utility (both graphical and console) using TLS, you must directly specify the protocol when setting the Server address: `ssl://`*<IP address or DNS name>*.

The Server settings to connect Dr.Web Server remote diagnostics utility are given in the **Administrator Manual**, p. <u>Dr.Web Server Remote Access</u>.

Utility Console Version

The start instruction format

```
drwcntl [-?|-h|--help] [+<log_file>] [<server> [<login> [<password>]]]
```

where:

- `-? -h --help`—show help message on commands for using the utility.
- *<log_file>*—write all utility actions into the log file by the specified path.
- *<server>*—address string of the Server, to which the utility connects, in the following format: `[(tcp|ssl)://]`*<IP address or DNS name>*`[:`*<port>*`]`.

  To be able to connect via the one of the supported protocols, it is necessary to meet the following conditions:

  a) To connect via `ssl`, in the `frontdoor.conf` configuration file, the `<ssl />` tag must be set. At this, the connection can be established via `ssl` only.

  b) To connect via `tcp`, in the `frontdoor.conf` configuration file, the `<ssl />` tag must be disabled (commented). At this, the connection can be established via `tcp` only.

  If connection parameters are not set in the Server address string, the following values are used:

Parameter	Default value
Connection protocol	`tcp` ⚠ For the TCP connection, the **Use TLS** flag must be cleared in the Control Center, in the **Administration → Dr.Web Server remote access** section. This disables the `<ssl />` tag in the `frontdoor.conf` configuration file.
IP address or DNS name of the Server	Utility prompts you to specify the Server addres in the corresponding format.
Port	`10101` ⚠ At the Server, allowed port is set in the **Dr.Web Server Remote Access** section and saved in the `frontdoor.conf` configuration file. If the alternative port is used in this section, it is neccessary to set this port directly when connecting the utility.

- *<login>*—login of the Server administrator.
- *<password>*—administrative password to access the Server.

  If administrative login and password are not set in the connection string, the utility prompts you to specify corresponding credentials.

Possible commands

- `cache` *<operation>*—operations with file cache. To request the certain operation, use the following commands:
  - `clear`—clear the file cache,

- `list`—show all file cache content,

- `matched` *<regular expression>*—show file cache content which matches the specified regular expression,

- `maxfilesize` [*<size>*]—show/set maximal size of preloaded file objects. When launched without additional parameters, shows the current size. To set the size, specify necessary size in bytes after the command name.

- `statistics`—show statistics of file cache usage.

- `calculate` *<function>*—calculate specified sequence. To request the certain sequence, use the following commands:

  - `hash` [*<standard>*] [*<string>*]—calculate hash of specified string. To set the certain standard, use the following commands:

    - `gost`—calculate hash of specified string according to the GHOST standard,

    - `md5`—calculate md5 hash of specified string,

    - `sha`—calculate hash of specified string according to the SHA standard,

    - `sha1`—calculate hash of specified string according to the SHA1 standard,

    - `sha224`—calculate hash of specified string according to the SHA224 standard,

    - `sha256`—calculate hash of specified string according to the SHA256 standard,

    - `sha384`—calculate hash of specified string according to the SHA384 standard,

    - `sha512`—calculate hash of specified string according to the SHA512 standard.

  - `hmac` [*<standard>*] [*<string>*]—calculate HMAC of specified string. To set the certain standard, use the following commands:

    - `md5`—calculate the HMAC-MD5 for the specified string,

    - `sha256`—calculate the HMAC-SHA256 for the specified string.

  - `random`—generate random number,

  - `uuid`—calculate unique identifier.

- `clients` *<operation>*—get information and manage clients connected to the Server. To request the certain function, use the following commands:

  - `addresses` [*<regular expression>*]—show stations network addresses that match specified regular expression. If the regular expression is not specified, show addresses of all stations.

  - `caddresses` [*<regular expression>*]—show the number of station IP addresses that match specified regular expression. If the regular expression is not specified, show the number of all stations.

  - `chosts` [*<regular expression>*]—show the number of station computer names that match specified regular expression. If the regular expression is not specified, show the number of all stations.

  - `cids` [*<regular expression>*]—show the number of station identifiers that match specified regular expression. If the regular expression is not specified, show the number of all stations.

- `cnames [<regular expression>]`—show the number of station names that match specified regular expression. If the regular expression is not specified, show the number of all stations.

- `disconnect [<regular expression>]`—terminate current active connections with stations whose identifiers match specified regular expression. If the regular expression is not specified, terminate connection with all connected stations.

- `enable [<mode>]`—show/set the mode of accepting clients at the Server. When launched without additional parameters, shows the current mode. To set the mode, use the following additional commands:

  - `on`—accept all client connections.

  - `off`—reject all client connections.

- `hosts <regular expression>`—show station computer names that match specified regular expression.

- `ids <regular expression>`—show station identifiers that match specified regular expression.

- `names <regular expression>`—show station names that match specified regular expression.

- `online <regular expression>`—show online time of the stations whose identifier, name or address match specified regular expression. Online time starts from the moment of last connection of the stations to the Server.

- `statistics <regular expression>`—show statistics on number of clients that match specified regular expression.

- `traffic <regular expression>`—show traffic information of currently connected clients that match specified regular expression.

- `core`—write the Server process dump.

- `cpu <parameter>`—show statistics of the computer CPU usage on which the Server is installed. To request the certain parameter, use the following commands:

  - `clear`—delete all accumulated statistic data,

  - `day`—show CPU loading graph for the current day,

  - `disable`—disable monitoring of CPU loading,

  - `enable`—enable monitoring of CPU loading,

  - `hour`—show CPU loading graph for the current hour,

  - `load`—show average CPU loading,

  - `minute`—show CPU loading graph for the passed minute,

  - `rawd`—show numeric statistic on CPU loading for the day,

  - `rawh`—show numeric statistic on CPU loading for the last hour,

  - `rawl`—show numeric statistic on average CPU loading,

  - `rawm`—show numeric statistic on CPU loading for the last minute,

  - `status`—show the monitoring state of CPU loading.

- `debug <parameter>`—debug configuration. To set the certain parameter, use the additional commands. To refine the additional commands list, you can call the help by the `? debug` command.

> The `debug signal` comman is available for the Servers under UNIX system-based OS only.

- `die`—stop the Server and write the Server process dump.

> The `die` command is available for the Servers under UNIX system-based OS only.

- `dwcp <parameter>`—set/show Dr.Web Control Protocol (includes Server, Agent and Agent installers protocols) options. Allowed parameters:
  - `compression <mode>`—set the one of the following traffic compression modes:
    - `on`—compression enabled,
    - `off`—compression disabled,
    - `possible`—compression is possible.
  - `encryption <mode>`—set the one of the following traffic encryption modes:
    - `on`—encryption enabled,
    - `off`—encryption disabled,
    - `possible`—encryption is possible.
  - `show`—show current Dr.Web Control Protocol options.
- `io <parameter>`—show input/output statistics of the Server process. To request the certain parameter, use the following command:
  - `clear`—delete all accumulated statistic data,
  - `disable`—disable statistics monitoring,
  - `enable`—enable statistics monitoring,
  - `rawdr`—show numeric statistic on data read for the day,
  - `rawdw`—show numeric statistic on data write for the day,
  - `rawh`—show numeric statistic for the last hour,
  - `rawm`—show numeric statistic for the last minute,
  - `rday`—show data read graph for the current day,
  - `rhour`—show data read graph for the last hour,
  - `rminute`—show data read graph for the last minute,
  - `status`—show statistics monitoring state,
  - `wday`—show data write graph for the day,
  - `whour`—show data write graph for the last hour,
  - `wminute`—show data write graph for the last minute.

- `log <parameter>`—write the string to the Server log file or set/view the log verbosity level. Depending on the specified parameters, the following actions are performed:

  - `log <string>`—write the specified string to the Server log file with the `NOTICE` verbosity level.

  - `log \s [<level>]`—set/show the log verbosity level. If the command launched with the `\s` command with no level specified, the current verbosity level is shown. Available values of the log verbosity level: `ALL`, `DEBUG3`, `DEBUG2`, `DEBUG1`, `DEBUG`, `TRACE3`, `TRACE2`, `TRACE1`, `TRACE`, `INFO`, `NOTICE`, `WARNING`, `ERROR`, `CRIT`.

- `lua`—execute LUA script.

- `mallopt <parameter>`—set the parameters of the memory allocation. To set the certain parameter, use the additional commands. To refine the additional commands list, you can call the help by the `? mallopt` command.

> ⓘ The `mallopt` command is available for the Servers under Linux system-based OS only.

To get more details on the command parameters features, refer the description of the `mallopt()` function from the `glibc` library. To get the help on this function, you can use the `man mallopt` command.

- `memory <parameter>`—show statistics of the computer memory usage on which the Server is installed. To request the certain parameter, use the following commands:

  - `all`—shoe all information and statistic data,

  - `heap`—show information on dynamic memory,

  - `malloc`—show statistic on memory allocation,

  - `sizes`—show statistic on allocated memory sizes,

  - `system`—show information on system memory.

> ⓘ The `memory` command is available for the Servers under Windows OS, Linux system-based OS and FreeBSD system-based OS only. At this, the following limitations on additional parameters of the `memory` command are active:
>
> - `system`—for the Servers under Windows OS, Linux system-based OS only,
> - `heap`—for the Servers under Windows OS, Linux system-based OS only,
> - `malloc`—for the Servers under Linux system-based OS and FreeBSD system-based OS only,
> - `sizes`—for the Servers under Linux system-based OS and FreeBSD system-based OS only.

- `monitoring <mode>`—set/show monitoring mode of CPU (the `cpu <parameter>` command) and I/O (the `io <parameter>` command) resources usage by the Server process. Allowed parameters:

  - `disable`—disable monitoring,

  - `enable`—enable monitoring,

  - □ `show`—show current mode.
- `printstat`—write the Server operation statistic to the log.
- `reload`—reload Dr.Web Server FrontDoor extension.
- `repository` <*parameter*>—repository management. To request the certain function, use the following commands:
  - □ `all`—show the list of all repository products and the number of all files by products,
  - □ `clear`—clear cache content not depending on the TTL value of the objects in the cache,
  - □ `fill`—read all repository files into cache,
  - □ `keep`—store all repository files currently in the cache forever, not depending on their TTL value,
  - □ `loaded`—show the list of all repository products and the number of all files by products which are currently in the cache,
  - □ `reload`—reload repository from disk,
  - □ `statistics`—show repository updates statistics.
- `restart`—restart the Server.
- `show` <*parameter*>—show the information about the system on which the Server is installed. To set the certain parameter, use the additional commands. To refine the additional commands list, you can call the help by the `? show` command.

> (!) The following limitations on additional parameters of the `show` command are active:
> - `memory`—for the Servers under Windows OS, Linux system-based OS only,
> - `mapping`—for the Servers under Windows OS, Linux system-based OS only,
> - `limits`—for the Servers under UNIX system-based OS only,
> - `processors`—for the Servers under Linux system-based OS only.

- `sql`—execute SQL query.
- `stop`—stop the Server.
- `traffic` <*parameter*>—show statistic on the Server network traffic. To request the certain parameter, use the following commands:
  - □ `all`—show all the traffic from the Server start.
  - □ `incremental`—show traffic incrementation from the last launch of the `traffic incremental` command.
  - □ `last`—show traffic incrementation from the last stored point.
  - □ `store`—create the stored point for the `last` command.
- `update` <*parameter*>—get information and manage updates. To request the certain function, use the following commands:
  - □ `active`—show the list of Agents which are currently updating.

- `agent [<mode>]`—show/set the mode of updating the Agents from the Server. When launched without additional parameters, shows the current mode. To set the mode, use the following additional commands:

  - `on`—enable Agents updates.
  - `off`—disable Agents updates.

- `gus`—launch the repository update from the GUS ignoring the GUS update state.

- `http [<mode>]`—show/set the mode of updating the Server repository from the GUS. When launched without additional parameters, shows the current mode. To set the mode, use the following additional commands:

  - `on`—enable repository updating from the GUS.
  - `off`—disable repository updating from the GUS.

- `inactive`—show the list of Agents which are not currently updating.

- `track [<mode>]`—show/set the mode of tracking the Agents update. When launched without additional parameters, shows the current mode. To set the mode, use the following additional commands:

  - `on`—enable Agents update tracking.
  - `off`—disable Agents update tracking. At this, the `update active` command will not show the list of currently updating Agents.

H9.4. Dr.Web Server Remote Scriptable Diagnostics Utility

Dr.Web Server remote diagnostics utility allows remotely connect to Dr.Web Server for basic controlling and viewing the operation statistics. Unlike the drwcntl, the `drwcmd` utility can be used at scripting.

The following console versions of Dr.Web Server remote scriptable diagnostics utility are provided:

Executable file	Location	Description
`drweb-cmd-<OS>-<bitness>`	Control Center, the **Administration → Utilities** section	Independent version of the utility. Can be launched from any directory or on any computer with corresponding operating system.
	The `webmin/utilities` Server directory	
`drwcmd`	The `bin` Server directory	Utility version depends on server libraries. Can be launched only from its location directory.

> ⓘ The `drweb-cmd-<OS>-<bitness>` and `drwcmd` version of the utility are similar in their functions. Further in the section, the `drwcmd` version is given, but all examples are relevant for both versions.

> ⚠️ For connection of the Server remote diagnostics utility, you must enable Dr.Web Server FrontDoor extension. To do this, in the **Dr.Web Server configuration** section, on the **Modules** tab, set the **Dr.Web Server FrontDoor extension** flag.
>
> ___
>
> For connection of the Server remote diagnostics utility, administrator that connects via the utility, must have the **Use additional features** permission. Otherwise, access to the Server via the remote diagnostics utility will be forbidden.

The Server settings to connect Dr.Web Server remote diagnostics utility are given in the **Administrator Manual**, p. Dr.Web Server Remote Access.

The start instruction format

```
drwcmd [<switches>] [<files>]
```

Allowed Switches

> ⓘ The `drwcmd` utility uses switches according the general rules described in the H1. Introduction.

- `--?`—show help message on switches for using the utility.
- `--help`—show help message on switches for using the utility.
- `--commands=<commands>`—execute specified commands (similar to the drwcntl utility commands). To specify several commands, use the `;` sign as a separator.
- `--debug=yes|no`—log utility operations in the debug mode (the `stderr` standard output stream). Default is `no`.
- `--files=yes|no`—allow execution of the commands (similar to the drwcntl utility commands) from the specified files. Default is `yes`.

  Commands must be set in a file by one on each line. Empty lines are ignored. Use the `#` sign to start a comment.
- `--keep=yes|no`—keep the connection with the Server after the last command is executed till the completion of the utility process. Default is `no`.
- `--output=<file>`—output file for the Server response. By default, if the file is not specified, the `stdout` standard output stream is used.

  If the file name starts with the (+), then the result of commands execution will be added to the end to file, otherwise—file will be rewritten.
- `--password=<password>`—password for the authorization at the Server. Can be defined in the file set in the `--resource` switch.
- `--read=yes|no`—allow reading the Server connection parameters from the resource file. Default is `yes`.

- `--resource=`<*file*>—resource file with the Server connection parameters: the Server address and administrator credentials for the authorization at the Server. By default, the `.drwcmdrc` file is used from the following directory:

  □ For UNIX system-based OS: `$HOME`

  □ For Windows OS: `%LOCALAPPDATA%`

  Each line in the file must contain 3 words separated by spaces: <*Server*> <*user*> <*password*>.

  To specify the space in the middle of a word, use the `%S`. If you need the percent sign, use `%P`.

  For example:

  ```
  ssl://127.0.0.1 user1 password1

  ssl://127.0.0.1 user2 password2

  ssl://127.0.0.1 user pass%Sword
  ```

- `--server=`<*Server*>—the Server address. Default is `ssl://127.0.0.1`. Can be defined in the file set in the `--resource` switch.

- `--user=`<*user*>—user name for the authorization at the Server. Can be defined in the file set in the `--resource` switch.

- `--verbose=yes|no`—print detailed response of the Server (the `stdout` standard output stream). Default is `no`.

The procedure for connecting to the Server:

1. When defining the data for the Server connection, the priority are given to the values specified in the switches `--server`, `--user` and `--password`.

2. If the `--server` switch is not specified, the default value is used—`ssl://127.0.0.1`.

3. If the `--user` switch is not specified, then the necessary Server is searched in the `.drwcmdrc` file (can be redefined in the `--resource` switch) and first user name is taken in the alphabetical order.

4. If the `--password` switch is not specified, then the search is performed in the `.drwcmdrc` file (can be redefined in the `--resource` switch) by the Server and user name.

> (!) User name and password will be read from the `.drwcmdrc` file (can be redefined in the `--resource` switch), if it is not forbidden by the `--read` switch.

5. If a user name and a password are not specified via the switches or the resource file, the utility prompts for credentials to be entered via the console.

Commands execution features:

- If the (–) values is set for the files with commands, then the utility reads command entered via the console.

- If both command in the `--commands` switch and the files list are set, then the commands from the `--commands` switch are executed first.

- If neither files of commands in the `--commands` switch are specified, then the commands entered via the console are read.

For example

To execute the command from the `--command` switch and then a console commands, enter the following:

```
drwcmd --commands=<commands> -- -
```

Completion Codes

- 0—successful execution.
- 1—the help in switches is requested: `--help` or `--?`.
- 2—command line parse error: authorization parameters are not specified, etc.
- 3—cannot create output file for the Server response.
- 4—Server authorization error: wrong administrator's login and/or password.
- 5—Server connection terminated abnormally.
- 127—unknown fatal error.

H9.5. Dr.Web Repository Loader

> ! Graphical version of the Repository Loader utility is described in the **Administrator Manual** document, in the p. GUI Utility.

The following versions of Dr.Web Repository Loader console utility are provided:

Executable file	Location	Description
`drweb-reploader-` `<OS>-<bitness>`	Control Center, the **Administration → Utilities** section	Independent version of the utility. Can be launched from any directory or on any computer with corresponding operating system.
	The `webmin/utilities` Server directory	
`drwreploader`	The `bin` Server directory	Utility version depends on server libraries. Can be launched only from its location directory.

> ! The `drweb-reploader-<OS>-<bitness>` and `drwreploader` version of the utility are similar in their functions. Further in the section, the `drwreploader` version is given, but all

examples are relevant for both versions.

To simplify specifying the switches to run the console utility, you can use the Repository Loader configuration file. In the pre-installed configuration file, the switches values correspond to the default values listed below, except the `--ssh-auth` switch: its value is redefined to the `pubkey` in the configuration file.

Possible Switches

- `--archive`—archive the repository. Default is `no`.

- `--auth` *<argument>*—credentials for authorization on the update server in the following format: *<user>*`[:`*<password>*`]`.

- `--cert-file` *<path>*—path to the root certificates storage for SSL authorization.

- `--cert-mode` `[`*<argument>*`]`—the type of SSL certificates that will be automatically accepted. This option is used only for secure protocols that support encrypting.

  The *<argument>* may take one of the following values:

  - `any`—accept all certificates,
  - `valid`—accept only valid certificates,
  - `drweb`—accept only Dr.Web certificates.
  - `custom`—accept user-defined certificates.

  The `drweb` value is used by default.

- `--config` *<path>*—path to the Repository Loader configuration file.

- `--cwd` *<path>*—path to the current working directory.

- `--ipc`—enable the transfer of data on the utility operation to the standard output stream. Default is `no`.

- `--help`—show help message on switches.

- `--license-key` *<path>*—path to the license key file (the key file or its MD5 hash must be specified).

- `--log` *<path>*—path to the log file on the repository downloading process.

- `--mode` *<mode>*—updates loading mode:

  - `repo`—repository is downloaded in the Server repository format. Loaded files can be directly imported via the Control Center as the Server repository updates. Value is used by default.

  - `mirror`—repository is downloaded in the GUS updates zone format. Loaded files can be placed on the updates mirror in your local network. Further, Servers can be configures to receive updates directly from this updates mirror containing the last version of the repository but not from the GUS servers.

- `--only-bases`—download only virus databases. Default is `no`.

- `--path` *<argument>*—download the repository from GUS to the folder specified as *<argument>*. When you archive the repository using the `--archive` switch, you can specify the path either to the folder name or to the archive file name. If the archive name is not specified, the `repository.zip` default name is used.

- `--product` *<argument>*—updated product. By default, entire repository is downloaded.

- `--prohibit-cdn`—deny CDN usage when downloading updates. Default is `no`, i.e. CDN is allowed to be used.

- `--proto` *<protocol>*—updates loading protocol: `file | ftp | ftps | http | https | scp | sftp | smb | smbs`. Default is `https`.

- `--proxy-auth` *<argument>*—data for authentication on the proxy server: user login and password in the following format: *<login>*`[`:*<password>*`]`.

- `--proxy-host` *<argument>*—proxy server address specified in the following format: *<server>*`[`:*<port>*`]`. Default is `3128`.

- `--rotate` *<N><f>*,*<M><u>*—Repository Loader log rotation mode. Same as Server log rotation.

  By default, it is `10,10m`, which means storing of 10 files 10 megabytes each, use compression.

- `--servers` *<argument>*—GUS servers addresses. It is recommended to leave the default value: `esuite.geo.drweb.com`.

- `--show-products`—show the list of GUS products. Default is `no`.

- `--ssh-auth` *<type>*—type of the authorization on the update server when accessing by SCP/SFTP. For the *<type>* parameter, the one of the following values is allowed:

  ▫ `pwd`—authorization using a password. A password is set in the `--auth` switch.

  ▫ `pubkey`—authorization using a public key. You must specify a private key in the `--ssh-prikey` switch to extract corresponding public key.

- `--ssh-prikey` *<path>*—path to the SSH private key.

- `--ssh-pubkey` *<path>*—path to the SSH public key.

- `--strict`—terminate downloading if an error occurred. Default is `no`.

- `--update-key` *<path>*—path to a public key or to a folder with a public key to validate the signature of updates that are loaded from GUS. The `update-key-*.upub` public keys to validate updates can be found on Dr.Web Server in the `etc` folder.

- `--update-url` *<argument>*—GUS servers folder where updates of Dr.Web products are located. It is recommended to leave the default value: `/update`.

- `--verbosity` *<details_level>*—log level of detail. `TRACE3` is by default. Allowed values are: `ALL, DEBUG3, DEBUG2, DEBUG1, DEBUG, TRACE3, TRACE2, TRACE1, TRACE, INFO, NOTICE, WARNING, ERROR, CRIT`. The `ALL` and `DEBUG3` values are synonyms.

- `--version` *<version>*—the Server version to which the updates must be loaded if the following format: *<major_version>*.*<minor_version>*. For example, for the Server of the 11 version, the *<version>* parameter takes the value `11.00`.

Switches Usage Features

When launching the Repository Loader, please note the following rules:

Switches must be obligatory specified	Condition
`--license-key`	Always
`--update-key`	
`--path`	
`--cert-file`	If the following switches take one of the values: • `--cert-mode valid | drweb | custom,` • `--proto https | ftps | smbs.`
`--ssh-prikey`	If the following switches take one of the values: • `--proto sftp | scp,` • `--ssh-auth pubkey.`

Examples of Use

1. To create an imported archive with all products:

```
drwreploader.exe --path C:\Temp --archive --license-key C:\agent.key --
update-key "C:\Program Files\DrWeb Server\etc" --cert-file "C:\Program
Files\DrWeb Server\etc"
```

2. To create an imported archive with virus bases:

```
drwreploader.exe --path C:\Temp --archive --license-key "C:\agent.key" --
update-key "C:\Program Files\DrWeb Server\etc" --cert-file "C:\Program
Files\DrWeb Server\etc" -only-bases
```

3. To create an imported archive with the Server only:

```
drwreploader.exe --path C:\Temp --archive --license-key "C:\agent.key" --
update-key "C:\Program Files\DrWeb Server\etc" --cert-file "C:\Program
Files\DrWeb Server\etc" --product=20-drwcs
```

Appendix I. Environment Variables Exported by Dr.Web Server

To simplify the setting of the processes run by Dr.Web Server on schedule, the data on location of the Server catalogs is required. To this effect, the Server exports the following variables of started processes into the environment:

- `DRWCSD_HOME`—path to the root folder (installation folder). The switch value is `–home`, if it was set at Server launch; otherwise the current folder at launch.

- `DRWCSD_BIN`—path to the folder with executable files. The switch value is `–bin-root`, if it was set at Server launch; otherwise it is the `bin` subfolder of the root folder.

- `DRWCSD_VAR`—path to the folder to which the Server has a write access and which is designed to store volatile files (for example, logs and repository files). The switchvalue is `–var-root`, if it was set at Server launch; otherwise it is the var subfolder of the root folder.

Appendix J. Regular Expressions Used in Dr.Web Enterprise Security Suite

Some parameters of Dr.Web Enterprise Security Suite are specified in the form of regular expressions of the following types:

- Regular expressions of Lua language.

  Used for configure an automatic membership of anti-virus network stations into user groups.

  Detailed description of Lua language regular expressions is available at http://www.lua.org/manual/5.1/manual.html#5.4.1.

- Regular expressions of PCRE program library.

  Detailed description of PCRE library syntax is available at http://www.pcre.org/.

  This appendix contains only a brief description of the most common examples for using regular expressions of PCRE library.

J1. Options Used in PCRE Regular Expressions

Regular expressions are used in the configuration file and in Dr.Web Security Control Center when objects to be excluded from scanning in the Scanner settings are specified.

Regular expressions are written as follows:

```
qr{EXP}options
```

where `EXP` is the expression itself; options stands for the sequence of options (a string of letters), and `qr{}` is literal metacharacters. The whole construction looks as follows:

`qr{pagefile\.sys}i`—Windows NT OS swap file

Below goes the description of options and regular expressions. For more details visit http://www.pcre.org/pcre.txt.

- Option `'a'` is equivalent to `PCRE_ANCHORED`

  If this option is set, the pattern is forced to be "anchored", that is, it is constrained to match only at the first matching point in the string that is being searched (the "subject string"). The same result can also be achieved by appropriate constructs in the pattern itself.

- Option `'i'` is equivalent to `PCRE_CASELESS`

  If this option is set, letters in the pattern match both upper and lower case letters. This option can be changed within a pattern by a `(?i)` option setting.

- Option `'x'` is equivalent to `PCRE_EXTENDED`

  If this option is set, whitespace data characters in the pattern are totally ignored except when escaped or inside a character class. Whitespaces do not include the VT character (code 11). In addition, characters between an unescaped # outside a character class and a newline character inclusively are ignored. This option can be changed in the pattern by setting a `(?x)`

option. This option enables including comments inside complicated patterns. Note, however, that this applies only to data characters. Whitespaces may not appear in special character sequences in a pattern, for example within the `(?(` sequence which introduces a conditional subpattern.

- Option `'m'` is equivalent to `PCRE_MULTILINE`

  By default, PCRE treats the subject string as consisting of a single line of characters (even if it actually contains newlines). The "*start of line*" metacharacter "`^`" matches only in the beginning of a string, while the "*end of line*" metacharacter "`$`" matches only in the end of a string or before a terminating newline (unless `PCRE_DOLLAR_ENDONLY` is set).

  When PCRE_MULTILINE is set, the "*start of line*" and "*end of line*" metacharacters match any newline characters which immediately follow or precede them in the subject string as well as in the very beginning and end of a subject string. This option can be changed within a pattern by a (?m) option setting. If there are no "`\n`" characters in the subject string, or `^` or `$` are not present in the pattern, the PCRE_MULTILINE option has no effect.

- Option `'u'` is equivalent to `PCRE_UNGREEDY`

  This option inverts the "greediness" of the quantifiers so that they are not greedy by default, but become greedy if followed by "?". The same result can also be achieved by the (?U) option in the pattern.

- Option `'d'` is equivalent to `PCRE_DOTALL`

  If this option is set, a dot metacharacter in the pattern matches all characters, including newlines. Without it, newlines are excluded. This option can be changed within a pattern by a (?s) option setting. A negative class such as [^a] always matches newline characters, regardless of the settings of this option.

- Option `'e'` is equivalent to `PCRE_DOLLAR_ENDONLY`

  If this option is set, a dollar metacharacter in the pattern matches only at the end of the subject string. Without this option, a dollar also matches immediately before a newline at the end of the string (but not before any other newline characters). The `PCRE_DOLLAR_ENDONLY` option is ignored if `PCRE_MULTILINE` is set.

J2. Peculiarities of PCRE Regular Expressions

A *regular expression* is a pattern that is matched against a subject string from left to right. Most characters stand for themselves in a pattern, and match the corresponding characters in the subject.

The power of regular expressions comes from the ability to include alternatives and repetitions in the pattern. These are encoded in the pattern by the use of metacharacters, which do not stand for themselves but instead are interpreted in a special way.

There are two different sets of metacharacters: those recognized anywhere in a pattern except within square brackets, and those recognized in square brackets. Outside square brackets, the metacharacters are as follows:

Symbol	Value
\	general escape character with several uses
^	assert start of string (or line, in multiline mode)
$	assert end of string (or line, in multiline mode)
.	match any character except newline (by default)
[	start character class definition
]	end character class definition
|	start alternative branch
(	start subpattern
)	end subpattern
?	extends the meaning of (
	also 0 or 1 quantifier
	also quantifier minimizer
*	0 or more quantifier
+	1 or more quantifier
	also "possessive quantifier"
{	start min/max quantifier

Part of a pattern that is in square brackets is called a "character class". In a character class the only metacharacters are:

Symbol	Value
\	general escape character
^	negate the class, but only if the first character
-	indicates character range
[	POSIX character class (only if followed by POSIX syntax)
]	terminates the character class

Appendix K. Log Files Format

Events on the Server (see **Administrator Manual**, p. Dr.Web Server Logging) and the Agent are logged into a text file, where every line is a separate message.

The format of a message line is as follows:

<year><month><day>.<hour><minute><second>.<centisecond> <message_type>
[*<process_id>*] *<thread_name>* [*<message_source>*] *<message>*

where:

- *<year><month><date>.<hour><minute><second>.<hundredth_of_second>*—exact date of message entry to the log file.
- *<message_type>*—log level:
    - **ftl** (**Fatal error**)—instructs to inform only of the most severe errors;
    - **err** (**Error**)—notify of operation errors;
    - **wrn** (**Warning**)—warn about errors;
    - **ntc** (**Notice**)—display important information messages;
    - **inf** (**Info**)—display information messages;
    - **tr0..3** (**Trace**, **Trace 1**, **Trace 2**, **Trace 3**)—enable tracing events. The options are displayed in the ascending order according to the level of detail. Trace instructs to log in the minimum level of detail; **Trace 3** instructs to log in the maximum level of detail;
    - **db0..3** (**Debug**, **Debug 1**, **Debug 2**, **Debug 3**)—instruct to log debugging events. The options are displayed in the ascending order according to the level of detail. Debug instructs to log in the minimum level of detail; **Debug 3** instructs to log in the maximum level of detail.

    > The **tr0..3** (**trace**) and **db0..3** (**debug**) levels of detail are applicable for messsages for Dr. Web Enterprise Security Suite developers only.

- [*<process_id>*]—unique numerical identifier of the process within which the thread that wrote the message to the log file was executed. Under certain OS [*<process_id>*] may be represented as [*<process_id> <thread_id>*].
- *<thread_name>*—character representation of the thread within which the message was logged.
- [*<message_source>*]—name of the system that initiated logging the message. The source is not always present.
- *<message>*—text description according to the log level. It may include both a formal description of the event and the values of certain event-relevant variables.

For example

1. `20081023.171700.74 inf [001316] mth:12 [Sch] Task "Purge unsent IS events" said OK`

   where:
   - `20081023`—*<year><month><date>*,
   - `171700`—*<hour><minute><second>*,
   - `74`—*<hundredth_of_second>*,
   - `inf`—*<message_type>*,
   - `[001316]`—[*<process_id>*],
   - `mth:12`—*<thread_name>*,
   - `[Sch]`—[*<message_source>*],
   - `Task "Purge unsent IS events" said OK`—*<message>* about the correct performance of the **Purge unsent events** events task.

2. `20081028.135755.61 inf [001556] srv:0`
   `tcp/10.3.0.55:3575/025D4F80:2: new connection at tcp/10.3.0.75:2193`

   where:
   - `20081028`—*<year><month><date>*,
   - `135755`—*<hour><minute><second>*,
   - `61`—*<hundredth_of_second>*,
   - `inf`—*<message_type>*,
   - `[001556]`—[*<process_id>*],
   - `srv:0`—*<thread_name>*,
   - `tcp/10.3.0.55:3575/025D4F80:2: new connection at`
     `tcp/10.3.0.75:2193`—*<message>* about having established a new connection through the specified socket.

Appendix L. Integration of Web API and Dr.Web Enterprise Security Suite

> ! The **Web API** is described in the **Web API for Dr.Web® Enterprise Security Suite** manual.

Application

Web API, when integrated to Dr.Web Enterprise Security Suite, provides functions for operation of transactions with accounts and automatisation of service users management. You can use it, for example, to create dynamic pages to receive requests from users and send them installation files.

Authentication

The HTTP(S) protocol is used to interact with Dr.Web Server. **Web API** accepts REST requests and replies with the XML. To get access to the Web API, the Basic HTTP authentication is used (in compliance with RFC 2617 standard). Contrary to RFC 2617 and related standards, the HTTP(S) server does not request credentials (i.e., Dr.Web Enterprise Security Suite administrator account name and its password) from the client.

Appendix M. Licenses

This section contains the list of third-party software libraries which are used by Dr.Web Enterprise Security Suite software, information on their licensing and development projects addresses.

Third-party library	License	Project URL
asio	https://www.boost.org/LICENSE_1_0.txt*	http://think-async.com/
boost	https://www.boost.org/LICENSE_1_0.txt*	http://www.boost.org/
brotli	MIT License**	https://github.com/google/brotli
bsdiff	Custom	http://www.daemonology.net/bsdiff/
c-ares	https://c-ares.haxx.se/license.html*	http://c-ares.haxx.se/
cairo	Mozilla Public License** GNU Lesser General Public License**	http://cairographics.org/
CodeMirror	MIT License**	http://codemirror.net/
curl	http://curl.haxx.se/docs/copyright.html*	http://curl.haxx.se/libcurl/
ICU	http://www.unicode.org/copyright.html#License*	http://site.icu-project.org/home
fontconfig	Custom	http://www.freedesktop.org/wiki/Software/fontconfig
freetype	GNU General Public License** FreeType Project License (BSD like)	http://www.freetype.org/
GCC runtime libraries	GNU General Public License** with exception*	http://gcc.gnu.org/
HTMLayout	Custom	http://www.terrainformatica.com/htmlayout/
jemalloc	https://github.com/jemalloc/jemalloc/blob/dev/COPYING*	https://github.com/jemalloc/jemalloc
jQuery	MIT License** GNU General Public License**	http://jquery.com/
Leaflet	BSD License	http://leafletjs.com

Third-party library	License	Project URL
	https://github.com/Leaflet/Leaflet/blob/master/LICENSE*	
libpng	http://libpng.org/pub/png/src/libpng-LICENSE.txt*	http://libpng.org/pub/png/libpng.html
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Linenoise NG	BSD license*	https://github.com/arangodb/linenoise-ng
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lua-xmlreader	MIT License**	http://asbradbury.org/projects/lua-xmlreader/
lua4json	MIT License**	http://json.luaforge.net/
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OpenLDAP	http://www.openldap.org/software/release/license.html*	http://www.openldap.org
OpenSSL	http://www.openssl.org/source/license.html*	http://www.openssl.org/
Oracle Instant Client	http://www.oracle.com/technetwork/licenses/instant-client-lic-152016.html*	http://www.oracle.com
ParaType Free Font	http://www.paratype.ru/public/pt_openlicense_eng.asp*	http://www.paratype.ru
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Prototype JavaScript framework	MIT License**	http://prototypejs.org/assets/2009/8/31/prototype.js
script.aculo.us scriptaculous.js	http://madrobby.github.io/scriptaculous/license/*	http://script.aculo.us/
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```
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```

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in this file):

 - libgcc (libgcc/, gcc/libgcc2.[ch], gcc/unwind*, gcc/gthr*, gcc/coretypes.h,
gcc/crtstuff.c, gcc/defaults.h, gcc/dwarf2.h, gcc/emults.c, gcc/gbl-ctors.h, gcc/gcov-
io.h, gcc/libgcov.c, gcc/tsystem.h, gcc/typeclass.h).

 - libdecnumber

 - libgomp

```
  - libssp

  - libstdc++-v3

  - libobjc

  - libmudflap

  - libgfortran

  - The libgnat-4.4 Ada support library and libgnatvsn library.

  - Various config files in gcc/config/ used in runtime libraries.

GCC RUNTIME LIBRARY EXCEPTION

Version 3.1, 31 March 2009

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files and runtime libraries with the compiled program. The purpose of this Exception is
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the header files and runtime libraries covered by this Exception.

0. Definitions.

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compiler intermediate representation.

The "Compilation Process" transforms code entirely represented in non-intermediate
languages designed for human-written code, and/or in Java Virtual Machine byte code,
into Target Code. Thus, for example, use of source code generators and preprocessors
need not be considered part of the Compilation Process, since the Compilation Process
can be understood as starting with the output of the generators or preprocessors.

A Compilation Process is "Eligible" if it is done using GCC, alone or with other GPL-
compatible software, or if it is done without using any work based on GCC. For example,
```

```
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```

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```
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--------------------------------------------------------------------------------

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```

M7. Leaflet

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linenoise

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M18. PCRE

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The basic library functions are written in C and are freestanding. Also included in the
distribution is a just-in-time compiler that can be used to optimize pattern matching.
This is an optional feature that can be omitted when the library is built.

THE BASIC LIBRARY FUNCTIONS

Written by: Philip Hazel

Email local part: ph10

```
Email domain:     cam.ac.uk

University of Cambridge Computing Service,

Cambridge, England.

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PCRE2 JUST-IN-TIME COMPILATION SUPPORT

-------------------------------------

Written by:       Zoltan Herczeg

Email local part: hzmester

Email domain:     freemail.hu

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STACK-LESS JUST-IN-TIME COMPILER

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Written by:       Zoltan Herczeg

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M19. Script.aculo.us

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M20. Zlib

```
zlib.h -- interface of the 'zlib' general purpose compression library

  version 1.2.11, January 15th, 2017

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Chapter 3: Frequently Asked Questions

Moving Dr.Web Server to Another Computer (under Windows® OS)

⚠️ After moving the Server to another computer, pay attention on transport protocols settings and, if necessary, edit corresponding settings in the **Administration → Dr.Web Server configuration** section, the **Transport** tab.

❗ Procedure of how to start and stop Dr.Web Server is described in the **Administrator Manual**, p. Start and Stop Dr.Web Server.

To transfer Dr.Web Server (for the similar Dr.Web Server versions) under Windows OS

1. Stop the Server.

2. Run `drwcsd.exe` using the `exportdb` switch to export the content of the database to a file. The full command line (for Windows) looks as follows:

   ```
   "C:\Program Files\DrWeb Server\bin\drwcsd.exe" exportdb <full_filename>
   ```

3. Backup the `C:\Program Files\DrWeb Server\etc` folder and the `drwcsd.pub` key from the `\Program Files\DrWeb Server\webmin\install` folder.

4. Remove Dr.Web Server software.

5. Install the new Server (empty, with the new DB) at the necessary computer. Stop the Server via the Windows OS service administrative loots or via Dr.Web Security Control Center.

6. Copy the automatic saved `etc` folder to the `C:\Program Files\DrWeb Server\etc` folder and also the `drwcsd.pub` key and the `drwcsd-certificate.pem` certificate to the `C:\Program Files\DrWeb Server\webmin\install` folder.

7. Run `drwcsd.exe` using the `importdb` switch to import the content of the database from a file. The full command line (for Windows) looks as follows:

   ```
   "C:\Program Files\DrWeb Server\bin\drwcsd.exe" importdb <full_filename>
   ```

8. Start the Server.

❗ In case of using embedded DB, it is not necessary to export and import DB. Just save the `database.sqlite` file and replace the new DB file at the installed Server by an old DB file from the previous version of the Server.

To transfer Dr.Web Server (for the different Dr.Web Server versions) under Windows OS

1. Stop the Server.

2. Save the database via the SQL server tools (in case of using embedded DB, just save the `database.sqlite` file).

3. Backup the `C:\Program Files\DrWeb Server\etc` folder and the `drwcsd.pub` key from the `\Program Files\DrWeb Server\webmin\install` folder.

4. Remove Dr.Web Server software.

5. Install the new Server (empty, with the new DB) at the necessary computer. Stop the Server via the Windows OS service administrative loots or via Dr.Web Security Control Center.

6. Copy the automatic saved `etc` folder to the `C:\Program Files\DrWeb Server\etc` folder and also the `drwcsd.pub` key and the `drwcsd-certificate.pem` certificate to the `C:\Program Files\DrWeb Server\webmin\install` folder.

7. Restore the DB on new Server and specify the path to the DB in the configuration file.

8. Run `drwcsd.exe` using the `upgradedb` switch to upgrade the database. The full command line (for Windows) looks as follows:

```
"C:\Program Files\DrWeb Server\bin\drwcsd.exe" upgradedb "C:\Program
Files\DrWeb Server\update-db"
```

9. Start the Server.

If Dr.Web Server name or IP address is changed during the transfer:

> ⚠️ For the possibility of transfer of Agents for which the new Server address is set via the Control Center, but not in the Agent settings at the station, keep both Servers operating till the procedure is completed.

1. Transfer the Server according to the corresponding procedure, described above.

2. For all Agents, which are served by transferred Server, specify the address of the new Server according to the procedure described in the [Connecting Dr.Web Agent to Other Dr.Web Server](#) section.

   For the Agents for which the new Server address is set via the Control Center, but not in the Agent settings at the station, on both Servers in the Agent settings, the new Server IP address must be specified.

3. Wait until all Agents connect to the new Server. After this, you can remove the old Server.

Connecting Dr.Web Agent to Other Dr.Web Server

You can connect the Agent to the other Server by one of the following ways:

1. <u>Via the Control Center</u>.

   Remote management without a direct access to the station is possible in case the station is still connected to the previous Server. You need the access to the Control Center both of the previous and the new servers.

2. <u>Directly at the station</u>.

   To perform the actions directly on the station, you must have administrative permissions on the station and permissions to edit the Agent properties, which are set on the Server. If you do not have these permissions, you can reconnect to other Server locally on the station only after removing installed Agent and installing the new Agent with the new Server settings. If you do not have permissions to remove the Agent locally, use Dr.Web Remover utility to remove the Agent on the stations or remove the Agent via the Control Center.

To reconnect Dr.Web Agent to another Dr.Web Server via the Control Center

1. On the new Server, allow the stations with incorrect authorization parameters to request new authorization parameters as being newbies. For this, in the Control Center, select the **Administration** item of the main menu → the **Dr.Web Server configuration** item of the control menu → the **General** tab:

   a) Set the **Reset unauthorized to newbie** flag if it is cleared.

   b) If the option **Always deny access** is selected in the **Newbies registration** drop-down list, change it to the **Approve access manually** or **Allow access automatically**.

   c) To apply these settings, click **Save** and reboot the Server.

   > (!) If your company policy does not allow to change settings from the step 1, then you need to set the parameters of the station authorization, in accordance with the account created in advance in the Control Center, directly at the station.

2. On the old Server to which the Agent is connected, set the parameters of the new Server. For this, in the main menu of the Control Center, select the **Anti-Virus Network** item → select the required station (or the group for reconnecting all the stations of this group) in the hierarchical list of the network → in the control menu, select the **Connection settings** item:

   a) If the new Server certificate does not match the previous Server certificate, set the path to the new Server certificate in the **Certificate** field.

   b) Set the new Server address in the **Server** field.

   c) Click **Save**.

To reconnect Dr.Web Agent to another Dr.Web Server directly at station

1. Set the new Server parameters in the Agent settings. For this, in the context menu of the Agent icon, select: **Settings** → the **Main** tab → the **Server** item → the **Connection parameters** section → the **Change settings** button:

   a) If the new Server certificate does not match the previous Server certificate, set the path to the new Server certificate using the **List of certificates** button.

   b) Set the corresponding parameters of the new Server using the **Add** button.

2. Make the station a newbie (reset the authorization parameters on the Server). For this, in the connection settings section from the step 1, click the following: the **Station connection parameters** button → the **Reset the parameters and connect as a newbie** button → the **Reset the parameters** button.

> If you already know the ID and the password to connect the new Server, you can provide them in the **Station ID** and the **Password** fields. In this case, there is no need to make the station a newbie.

Changing the Type of the DBMS for Dr.Web Enterprise Security Suite

For Windows OS

> (!) Procedure of how to start and stop Dr.Web Server is described in the **Administrator Manual**, p. Start and Stop Dr.Web Server.

1. Stop Dr.Web Server.

2. Run `drwcsd.exe` using the `exportdb` switch to export the content of the database to a file. The full command line (for Windows) looks as follows:

```
"C:\Program Files\DrWeb Server\bin\drwcsd.exe" -home="C:\Program
Files\DrWeb Server" -var-root="C:\Program Files\DrWeb Server\var" -
verbosity=all exportdb D:\esbase.es
```

It is presumed that Dr.Web Server is installed to the `C:\Program Files\DrWeb Server` folder and the database is exported to a file `esbase.es`, which is in the root of disc `D`.

If the path to a file (or a file name) contains spaces or national characters, the path should be put in quotation marks:

```
"D:\<long name>\esbase.es"
```

3. Start Dr.Web Server, connect Dr.Web Security Control Center to the Server and configure the Server to use a different DBMS. Cancel restarting the Server.

4. Stop Dr.Web Server.

5. Delete the database file.

6. Run `drwcsd.exe` using the `initdb` switch to initialize a new database. The command line will look as follows:

```
"C:\Program Files\DrWeb Server\bin\drwcsd.exe" -home="C:\Program
Files\DrWeb Server" -var-root="C:\Program Files\DrWeb Server\var" -
verbosity=all initdb D:\Keys\agent.key - - root
```

It is presumed that the Server is installed to the `C:\Program Files\DrWeb Server` folder and `agent.key` resides in `D:\Keys`.

If the path to a file (or a file name) contains spaces or national characters, the path to the key should be put in quotation marks:

```
"D:\<long name>\agent.key"
```

7. Run `drwcsd.exe` using the `importdb` switch to import the database from the file. The command line will look as follows:

```
"C:\Program Files\DrWeb Server\bin\drwcsd.exe" -home="C:\Program
Files\DrWeb Server" -var-root="C:\Program Files\DrWeb Server\var" -
verbosity=all importdb D:\esbase.es
```

8. Start Dr.Web Server.

For UNIX OS

1. Stop Dr.Web Server using the script

   - for **Linux** OS:

   ```
   /etc/init.d/drwcsd stop
   ```

   - for **FreeBSD** OS:

   ```
   /usr/local/etc/rc.d/drwcsd stop
   ```

   or via Dr.Web Security Control Center.

2. Start the Server with the `exportdb` switch to export the database to a file. The command line from the Server installation folder will look as follows:

   - for **Linux** OS:

   ```
   /etc/init.d/drwcsd exportdb /var/esbase.es
   ```

   - for **FreeBSD** OS:

   ```
   /usr/local/etc/rc.d/drwcsd exportdb /var/drwcs/esbase.es
   ```

   It is presumed that the database is exported to `esbase.es`, which resides in the specified folder.

3. Start Dr.Web Server using the script

   - for **Linux** OS:

   ```
   /etc/init.d/drwcsd start
   ```

   - for **FreeBSD** OS:

   ```
   /usr/local/etc/rc.d/drwcsd start
   ```

   connect Dr.Web Security Control Center to the Server and configure the Server to use another database through Dr.Web Security Control Center menu: **Administration → Dr.Web Server configuration → Database** tab.

   > ⓘ You can also reconfigure the Server to use another database/DBMS by editing the Server configuration file `drwcsd.conf` directly. To do this, you should comment/delete the entry about the current database and enter the new database (for more details see Appendix G1. Dr.Web Server Configuration File).

You will be prompted to restart the Server. Reject restarting.

4. Stop Dr.Web Server (see step 1).

5. Delete the database file.

6. Run `drwcsd` using the `initdb` switch to initialize a new database. The command line will look as follows:

   • for **Linux** OS:

   ```
   /etc/init.d/drwcsd initdb /root/keys/agent.key - - root
   ```

   • for **FreeBSD** OS:

   ```
   /usr/local/etc/rc.d/drwcsd initdb /root/keys/agent.key - - root
   ```

   It is presumed that the `agent.key` resides in the `/root/keys` folder.

7. Run `drwcsd` using the `importdb` switch to import the database from a file. The command line will look as follows:

   • for **Linux** OS:

   ```
   /etc/init.d/drwcsd importdb /var/esbase.es
   ```

   • for **FreeBSD** OS:

   ```
   /usr/local/etc/rc.d/drwcsd importdb /var/esbase.es
   ```

8. Start Dr.Web Server (see step 3).

> (!) If you want to change the parameters at Server start (for example, specify the Server installation folder, change the log level, etc.), you will have to edit the start script:
>
> • for **FreeBSD** OS: `/usr/local/etc/rc.d/drwcsd`
> • for **Linux** OS: `/etc/init.d/drwcsd`

Restoring the Database of Dr.Web Enterprise Security Suite

During the operation, Dr.Web Server regularly stores backup copies of important information: license keys, database contents, encryption private key, Server configuration and Control Center configuration.

The backup files are stored in the following folders:

- for **Windows** OS: *<installation_drive>*`:\DrWeb Backup`
- for **Linux** OS: `/var/opt/drwcs/backup`
- for **FreeBSD** OS: `/var/drwcs/backup`

To perform the back up, a daily task is included into the Server schedule. If such task is missing in the schedule, it is recommended to create it.

All files in the backup except the database contents, are ready to use. The database backup copy is stored in the `.gz` format compatible with `gzip` and other archivers. The database contents can be imported from the backup copy to another database of the Server using the `importdb` command, thus restore the data.

> ⓘ To restore the database you can also use a backup created manually by administrator via the Control Center in the **Administration → Database management → Export** (for the **Export entire database** mode only). But, at this, a backup copy is saved in the xml format, and for the import you must use the `xmlimportdb` command.

Restoring the DB for Different Versions of Dr.Web Server

> ⚠ You can restore the DB from the backup copy only if it had been created via the Server of the same major version as the version of the Server which you use for restoring.
>
> **For example:**
>
> - You can restore DB from the backup created via the Server of 10 version using the Server of 10 version only.
> - You cannot restore DB from the backup created via the Server of 5 or 6 version using the Server of 10 version.

If DB has been corrupted for some reasons during Server upgrade from previous versions to 11.0.2 version, do the following:

1. Remove the Server software of the 11.0.2 version. Backup copies of files, used by the Server, will be stored automatically.
2. Install the Server of version, which had been installed before upgrading and had been used to create backup copy.

According to the general upgrade procedure, you should use all stored Server files except the DB file.

Create a new DB during the Server installation.

3. Restore DB from the backup according to general rules (see procedures below).

4. Disable the Agent, the Server and the Network Installer protocols in the Server settings. To do this, select the **Administration** item in the main menu and click **Dr.Web Server configuration** in the control menu, go to the **Modules** tab and clear corresponding flags.

5. Upgrade the Server to the 11.0.2 version according to general rules (see **Administrator Manual**, p. Updating Dr.Web Enterprise Security Suite Software and Its Components).

6. Enable the Agent, the Server and the Network Installer protocols, disabled at the step 4.

For Windows OS

> (!) Procedure of how to start and stop Dr.Web Server is described in the **Administrator Manual**, p. Start and Stop Dr.Web Server.

To restore DB from backup

1. Stop Dr.Web Server if it is running.

2. Import the content of the database from the correspondent backup file. The command line will look as follows:

```
"C:\Program Files\DrWeb Server\bin\drwcsd.exe" -home="C:\Program
Files\DrWeb Server" -var-root="C:\Program Files\DrWeb Server\var" -
verbosity=all importdb "<path_to_the_backup_file>\database.gz"
```

The command must be entered in a single line. It is presumed that Dr.Web Server is installed to the `C:\Program Files\DrWeb Server` folder.

3. Start Dr.Web Server.

To restore DB from backup in case of changing Dr.Web Server version or corruption of the previous DB version

1. Stop Dr.Web Server if it is running.

2. Remove the current DB. To do this:

2.1. For the embedded DB:

a) Remove `database.sqlite` file.

b) Initialize a new database. In Windows the command line will look as follows:

```
"C:\Program Files\DrWeb Server\bin\drwcsd.exe" -home="C:\Program
Files\DrWeb Server" -var-root="C:\Program Files\DrWeb Server\var" -
verbosity=all initdb D:\Keys\agent.key - - <password>
```

The command must be entered in a single line (see also `drwcsd` command format with the `initdb` switch at the <u>Appendix H4.3</u>). It is presumed that Dr.Web Server is installed to the `C:\Program Files\DrWeb Server` folder and `agent.key` license key is located in `D:\Keys`.

c) Once this command is executed, a new `database.sqlite` will be generated in the `var` subfolder of Dr.Web Server installation folder.

2.2. For the external DB: clean up the DB via the `cleandb` command (see <u>Appendix H4.3</u>).

3. Import the content of the database from the correspondent backup file. The command line will look as follows:

```
"C:\Program Files\DrWeb Server\bin\drwcsd.exe" -home="C:\Program
Files\DrWeb Server" -var-root="C:\Program Files\DrWeb Server\var" -
verbosity=all importdb "<path_to_the_backup_file>\database.gz"
```

The command must be entered in a single line. It is presumed that Server is installed to the `C:\Program Files\DrWeb Server` folder.

4. Start Dr.Web Server.

For UNIX OS

1. Stop Dr.Web Server.

- for **Linux** OS:

```
/etc/init.d/drwcsd stop
```

- for **FreeBSD** OS:

```
/usr/local/etc/rc.d/drwcsd stop
```

2. Remove `database.sqlite` from the following subfolder of Dr.Web Server installation folder:

- for **Linux** OS: `/var/opt/drwcs/`
- for **FreeBSD** OS: `/var/drwcs/`

> ⓘ To clean an external DB, use the `cleandb` command (see <u>Appendix H4.3</u>).

3. Initialize the Server database. The command will look as follows:

- for **Linux** OS:

```
/etc/init.d/drwcsd initdb
```

- for **FreeBSD** OS:

```
/usr/local/etc/rc.d/drwcsd initdb
```

4. Once this command is executed, a new `database.sqlite` database will be generated in the `var` subfolder of Dr.Web Server installation folder.

5. Import the content of the database from the correspondent backup file. The command line will look as follows:

   • for **Linux** OS:

   ```
   /etc/init.d/drwcsd importdb "<path_to_the_backup_file>/database.gz"
   ```

   • for **FreeBSD** OS:

   ```
   /usr/local/etc/rc.d/drwcsd importdb "<path_to_the_backup_file>/database.gz"
   ```

6. Start Dr.Web Server:

   • for **Linux** OS:

   ```
   /etc/init.d/drwcsd start
   ```

   • for **FreeBSD** OS:

   ```
   /usr/local/etc/rc.d/drwcsd start
   ```

> If you want to run the script with parameters (e.g., set Server installation directory and etc.), you must make all changes in the start script:
>
> • for FreeBSD OS: `/usr/local/etc/rc.d/drwcsd`
> • for Linux OS: `/etc/init.d/drwcsd`
>
> If you need to change the log level of detail of the Server, use the `local.conf` file:
>
> • for Linux OS: `/var/opt/drwcs/etc/local.conf;`
> • for FreeBSD OS: `/var/drwcs/etc/local.conf.`
>
> ---
>
> If some Agents were installed after the last backup had been made, they will not be connected to the Server after the database has been restored from the backup. You should remotely reset them to the newbie mode. In the **Administrating → Dr.Web Server configuration** on the **General** tab, set the **Reset unauthorized to newbie** flag and in the **Newbies registration mode** drop-down list, select **Allow access automatically**. Click **Save** and restart the Server.
>
> After all stations will be successfully connected to the new Server, change these Server settings to the settings adopted according to the policy of your company.
>
> ---
>
> As soon as the database is restored from the backup it is recommended to connect Dr.Web Security Control Center to the Server. On the **Administration** menu, select **Dr.Web Server Task Scheduler** and check that the **Back up critical server data** task is on the list. If this task is absent, add it to the list.

Upgrading Dr.Web Agents on the LAN servers

When upgrading Agents installed on the LAN servers, restarting stations or stopping a network software on such stations can be unwanted.

To avoid functionality downtime of stations that implement significant network functions, the following upgrading mode of Agents and anti-virus software is recommended:

1. In the Server schedule, change standard tasks for upgrading all components to upgrading virus bases only.

2. Create a new task for upgrading all components at the suitable time, when it will not be critical for LAN servers functionality.

   How to create and edit tasks in the Server schedule, described in the **Administrator Manual**, p. Setting Dr.Web Server Schedule section.

⚠️ It is not recommended to install SpIDer Gate, SpIDer Mail and Dr.Web Firewall components on servers those implement significant network functions (domain controllers, license distribution servers and etc.) to avoid probable conflicts between network services and internal components of Dr.Web anti-virus.

Restoring the Password of Dr.Web Enterprise Security Suite Administrator

If the administrative password for access to Dr.Web Server is lost, you can view or change it by direct access to the Server DB:

a) For an embedded DB, to view and change administrative password, use the `drwidbsh` utility, which is included in the Server distribution kit (see H9.2. Administrating Utility of the Embedded Database).

b) For an external DB, use corresponding sql client.

> ⚠ Parameters of administrative accounts are stored in the `admins` table.

Example of using the drwidbsh utility

1. Run the `drwidbsh3` utility and specify the path to the DB file:

   - For the embedded DB under Linux OS:

   ```
   /opt/drwcs/bin/drwidbsh3 /var/opt/drwcs/database.sqlite
   ```

   - For the embedded DB under Windows OS:

   ```
   "C:\Program Files\DrWeb Server\bin\drwidbsh3" "C:\Program Files\DrWeb Server\var\database.sqlite"
   ```

   > ⚠ If you use embedded database of an old IntDB format, e.g., in case of the Server upgrade from the 6 version, when default database name is `dbinternal.dbs`, and database management utility is `drwidbsh`.

2. To view all data from the `admins` table, run the following command:

   ```
   select * from admins;
   ```

3. To view logins and passwords of all administrative accounts, run the following command:

   ```
   select login,password from admins;
   ```

4. If only one account with the `admin` name exists and it has the `root` password, you will get the following result:

   ```
   sqlite> select login,password from admins;
   admin|root
   sqlite>
   ```

5. To change the password, use the `update` command. In the following example, the command changes the password of the `admin` account to `qwerty`:

```
update admins set password='qwerty' where login='admin';
```

6. To exit the `drwidbsh` utility, run the following command:

```
.exit
```

Description of the `drwidbsh` utility is given in the appendix <u>H9.2. Administrating Utility of the Embedded Database</u>.

Using DFS During Installation of the Agent via the Active Directory

During installation of Dr.Web Agent via the Active Directory service, you can use Distributed File System (DFS).

It can be useful, for example, for several domain controllers in LAN.

For installation in the LAN with several domain controllers:

1. Create directory with the same name on each domain controller.

2. Via the DFS, unite created directories to one root destination directory.

3. Perform the administrative installation of the `*.msi` package to the created destination directory (see **Installation Manual**, p. Installing Dr.Web Agent Software via Active Directory).

4. Use this destination directory during package assignment in the group policy object editor.

    Use the network address as: \\<*domain*>\<*folder*>

    where: <*domain*>—the domain name, <*folder*>—the name of destination directory.

Restoring the Anti-virus Network after Dr.Web Server Failure

In case Dr.Web Server fatal failure, it is recommended to use the following procedures to restore anti-virus network operability without reinstalling the Agents on stations.

> (!) Meant, the new Dr.Web Server will be installed on a computer with the same IP address and DNS name.

Restoring from Dr.Web Server Backup

During the operation, Dr.Web Server regularly stores backup copies of important information: license keys, database contents, encryption private key, Server configuration and Control Center configuration.

The backup files are stored in the following folders:

- for **Windows** OS: *<installation_drive>*`:\DrWeb Backup`
- for **Linux** OS: `/var/opt/drwcs/backup`
- for **FreeBSD** OS: `/var/drwcs/backup`

To perform the back up, a daily task is included into the Server schedule. If such task is missing in the schedule, it is recommended to create it.

All files in the backup except the database contents, are ready to use. The database backup copy is stored in the `.gz` format compatible with `gzip` and other archivers. The database contents can be imported from the backup copy to another database of the Server using the `upimportdb` command, thus restore the data.

> (!) To restore the database you can also use a backup created manually by administrator via the Control Center in the **Administration → Database management → Export** (for the **Export entire database** mode only). But, at this, a backup copy is saved in the xml format, and for the import you must use the `xmlupimportdb` command.

It is also recommended to store copies of created backups and other important files on another computer. Thus, you will be able to avoid data loss should the computer, on which Dr.Web Server is installed, be damaged, and to fully restore the data and the functionality of the Server. If license keys are lost, they may be requested once again, as specified in **Administrator Manual**, p. Licensing.

If after the Server failure, the backup is available, perform the following procedure:

1. Choose a computer to install the new Dr.Web Server. Isolate this computer from operating Agents: disconnect it from the network in which the Agents are installed or temporarily change its IP address, or use any other method you mostly prefer.

2. Install the new Dr.Web Server.

3. In the **Administrating → License manager** section, add the license key from the previous Server installation and propagate it on corresponding groups, particularly on the **Everyone** group. The step is obligatory if the license key was not set during the Server installation.

4. Update repository of the installed Server from the GUS:

   a) Open the **Administrating → Repository state** section of the Control Center.

   b) Click the **Check for updates** button to check whether updates to all of the products are available on the GUS servers and download updates, if any.

5. If new versions of the Server software are available, perform the update to the latest version:

   a) Open **Administrating → Dr.Web Server** section of the Control Center.

   b) To open the Server versions list, click the current version of the Server or click the **Versions list** button. This opens the **Dr.Web Server Updates** section with the list of available updates and backups of the Server.

   c) To update the Server software, set the option next to the last version in the **All versions** list. Click **Save**.

   d) Wait for the completion of the Server update process.

6. Stop the Server.

7. To get a public encryption key from the private key backup, use the `drwsign` utility from the `\bin` subfolder of the Server installation folder:

   `drwsign extract [-private-key=<private_key>] <public_key>`

   As the *<private_key>* and *<public_key>*, specify the corresponding paths to find the private key and to place the creating public key.

8. Replace the Server critical data with the saved ones from the backup:

Operating system	Public encryption key	Configuration files
Windows	`webmin\install` in the Server installation folder	`etc` in the Server installation folder
Linux	`/opt/drwcs/webmin/install`	`/var/opt/drwcs/etc`
FreeBSD	`/usr/local/drwcs/webmin/install`	`/var/drwcs/etc`

9. Configure the database.

   a) External database:

      No more actions to connect the database to the Server are required (as long as the Server configuration file has been saved).

      If the version of the Server installed from the last updates is newer than the version of the lost Server, update the external database via the `upgradedb` command:

      ▫ for Windows OS:

```
"C:\Program Files\DrWeb Server\bin\drwcsd.exe" upgradedb
```

　　□ for Linux OS:

```
/etc/init.d/drwcsd upgradedb
```

　　□ for FreeBSD OS:

```
/usr/local/etc/rc.d/drwcsd upgradedb
```

b) Backup of external or embedded database:

For the external database, preliminary clean it up via the `cleandb` command (see [Appendix H4.3]).

Import the database content from the corresponding backup file with database format updating to the installed Server version using the `upimportdb` command:

- for Windows OS:

```
"C:\Program Files\DrWeb Server\bin\drwcsd.exe" -home="C:\Program
Files\DrWeb Server" -var-root="C:\Program Files\DrWeb Server\var" -
verbosity=all upimportdb "<path_to_the_backup_file>\database.gz"
```

- for Linux OS:

```
/etc/init.d/drwcsd upimportdb "<path_to_the_backup_file>/database.gz"
```

- for FreeBSD OS:

```
/usr/local/etc/rc.d/drwcsd upimportdb "<path_to_the_backup_file>/database.gz"
```

> ⚠ For all replaced files assign the same permissions as those set at the previous (lost) installation of the Server.
>
> For UNIX system-based OS: `rw` for `drwcs:drwcs`.

10. Start the Server.

11. Make sure that data from the database backup is save and actual: the Agent settings, anti-virus network tree state and etc.

12. Restore the Server accessibility for the Agents according to the Server isolation way selected on step 1.

> ⓘ If some Agents were installed after the last backup had been made, they will not be connected to the Server after the database has been restored from the backup. You should remotely reset them to the newbie mode. In the **Administrating → Dr.Web Server configuration** on the **General** tab, set the **Reset unauthorized to newbie** flag and in the **Newbies registration mode** drop-down list, select **Allow access automatically**. Click **Save** and restart the Server.

After all stations will be successfully connected to the new Server, change these Server settings to the settings adopted according to the policy of your company.

Restoring without Dr.Web Server Backup

If after the Server failure, no backup had been saved, perform the following procedure:

1. Choose a computer to install the new Dr.Web Server. Isolate this computer from operating Agents: disconnect it from the network in which the Agents are installed or temporarily change its IP address, or use any other method you mostly prefer.

2. Install the new Dr.Web Server.

3. In the **Administrating → License manager** section, add the license key from the previous Server installation and propagate it on corresponding groups, particularly on the **Everyone** group. The step is obligatory if the license key was not set during the Server installation.

4. Update repository of the installed Server from the GUS:

   a) Open the **Administrating → Repository state** section of the Control Center.

   b) Click the **Check for updates** button to check whether updates to all of the products are available on the GUS servers and download updates, if any.

5. If new versions of the Server software are available, perform the update to the latest version:

   a) Open **Administrating → Dr.Web Server** section of the Control Center.

   b) To open the Server versions list, click the current version of the Server or click the **Versions list** button. This opens the **Dr.Web Server Updates** section with the list of available updates and backups of the Server.

   c) To update the Server software, set the option next to the last version in the **All versions** list. Click **Save**.

   d) Wait for the completion of the Server update process.

6. Change the stations connection settings in the Server configuration:

   a) Open **Administrating → Dr.Web Server configuration**.

   b) On the **General** tab, set the **Reset unauthorized to newbie** flag.

   c) On the **General** tab in the **Newbies registration mode** drop-down list, select **Allow access automatically**.

   d) Click **Save** and restart the Server.

7. In the **Anti-virus Network** section of the Control Center, create user groups in the anti-virus network tree similarly with the previous version. If necessary, create automatic membership rules for stations in the created user groups.

8. If necessary, specify the Agent settings and the Server settings (except the temporary settings from the step 5) similarly with the previous version.

9. If necessary, change the repository settings in the **Administrating → Detailed repository configuration** section.

10. Restore the Server accessibility for the Agents according to the Server isolation way selected on step 1.

11. Replace the public encryption key on all stations of the network that are planned to connect to the new Server.

    - If the self-protection is enabled, copy to a station the public key created during the new Server installation and run the following command:

      ```
      es-service.exe -p <key>
      ```

      or

      ```
      es-service.exe --addpubkey=<key>
      ```

      As the *<key>*, specify the path to the public encryption key copied to a station.

      In a result, the public key will be copied to the Agent installation folder. By default, it is the `%ProgramFiles%\DrWeb` folder (for more details, see the Appendix H3. Dr.Web Agent for Windows®).

    - If the self-protection is disabled on a station, you can take the public key created during the new Server installation and place it into the folder specified above.

12. After all stations will be successfully connected to the new Server, change the Server settings specified on step 5 to the settings adopted according to the policy of your company.

Managing the Logging Level of Dr.Web Server for Windows® OS

You can change the level of logging detail for the Server under Windows OS by one of the following ways:

1. Using the **Dr.Web Server configuration → Log** section of the Control Center.

   This method is preferred. In the **Log** section, you can specify any allowed level of logging detail for the Server, and also some other settings.

   Detailed information is given in the **Administrator Manual**, in the Dr.Web Server configuration → Log section.

2. Using the console command:

   ```
   drwcsd [<switches>] install
   ```

   You can specify any allowed level of logging detail for the Server via the `--verbosity` switch.

   Detailed information on command line switches for the Server management is given in the H4.8. The Description of Switches section.

   Command example to set the **Detailed** logging level:

   ```
   drwcsd --daemon "--home=C:\Program Files\DrWeb Server" "--bin-root=C:
   \Program Files\DrWeb Server" "--var-root=C:\Program Files\DrWeb
   Server\var" --verbosity=ALL --rotate=10,50m install
   ```

The other switches are mandatory, particularly, if you have redefined standard paths of the Server installation and working folders.

After the log verbosity level has been changed, restart the Server:

```
drwcsd restart
```

3. Using the commands in the **Start** main menu of Windows OS.

   At this, only two possible levels of logging detail are available: **Detailed** or **Default**:

   a) **Programs → Server control → Detailed logging**
      or
      Programs → Server control → Default logging

   b) **Programs → Server control → Restart**.

Automatic Location of Stations under Android OS

Dr.Web Enterprise Security Suite allows automatic providing an administrator with information about geographic location of protected mobile devices under Android OS.

To locate a mobile device

1. Configure the transmission of the information on a mobile device location to Dr.Web Server:

   a) In Dr.Web Security Control Center, in the **Anti-virus network** section, in the network tree, select the necessary station or the group of stations under Android OS.

   b) Select the **Dr.Web for Android** item in the control menu.

   c) On the **General** tab, set the **Track location** flag. In the **Period of coordinates transmission** drop-down list, select a value according to which the device location data will be updated.

   d) Save the changes.

2. Automatic location tracking is performed by one of the following ways:

   - If location providers (GPS, mobile networks) are enabled on a user device and the signal is stable, the location is monitored by the means of a mobile device itself.

   - If location providers (GPS, mobile networks) are disabled on a user device or there is no GPS signal, Dr.Web Enterprise Security Suite provides the feature to use the Yandex.Locator technology to locate a mobile device on the coordinates of the mobile communication towers (GSM, 3D, LTE) and WiFi ID.
     To configure the Yandex.Locator technology, you must activate and set up the **Yandex.Locator Extension**:

     a) Get the API key on Yandex company website at
        https://tech.yandex.com/maps/keys/get/.

     b) In Dr.Web Security Control Center, in the **Administration → Dr.Web Server configuration → Modules** section, set the **Yandex.Locator Extension** flag.

     c) In the **API key** field, specify the key received on the step a).

d) Save the changes and restart Dr.Web Server.

> (!) WiFi ID can be used only on mobile devices under Android 5.1 and earlier.

3. To view a station location in Dr.Web Security Control Center:

a) In the **Anti-virus network** section, in the network tree, select the station for which the corresponding settings were specified at step 1.

b) In the station properties, in the **Location** section, geographic coordinates received from a mobile devise will be filled automatically.

c) Click **Show on map** to view geographic location on a mobile device on OpenStreetMap according to the received coordinates.

Chapter 4: Trouble Shooting

Remote Installation Trouble Shooting

Principle of the installation:

1. Dr.Web Server connects to the `ADMIN$` resource at the remote station (`\\<remote_station>\ADMIN$\Temp`) and copies the network installer `drwinst.exe` that is located in the `webmin\install\windows` folder of the Server installation folder and SSL certificate `drwcsd-certificate.pem` located in the `etc` folder of the Server installation folder, to the `\\<remote_station>\ADMIN$\Temp` folder.

2. The Server runs `drwinst.exe` file at the remote station with the command line switches according to the Control Center settings.

Successful installation requires the following on the Server from which the installation will be performed:

1. The `ADMIN$\Temp` resource must be available at the remote station.

   The availability can be checked in the following way:

   In the address line of the `Windows Explorer` application, enter the following:

   `\\<remote_station>\ADMIN$\Temp`

   You will get the prompt for entering login and password for assess to this resource. Enter the account data, which have been specified on the installation page.

   The `ADMIN$\Temp` resource can be unavailable for the following reasons:

   a) account does not have administrative rights;

   b) the station is powered off or firewall blocks assess to the 455 port;

   c) limitations of remote assess to the `ADMIN$\Temp` resource at the Windows Vista and later OS, if the station is outside a domain;

   d) the folder owner is absent or not enough privileges on the folder for the user or the group.

2. The `drwinst.exe` and `drwcsd.pub` files are available.

Dr.Web Security Control Center displays the external information (step and error code), which can help to diagnose the error reason.

The List of Dr.Web Agent Remote Installation Errors

Step	Error	Reason
Connecting via SMB to the *<host>*	Invalid address of the *<host>* station	Station IP address that is specified for the Agent installation is not a valid IPv4/IPv6

Step	Error	Reason
station		address or conversion of DNS name to address has failed: no such DNS name or a name server is incorrectly configured.
	Error connecting via SMB to the *<host>* station	Unable to connect to a station via SMB. Possible reasons: • the server service is disabled on a station; • the 445 port is not available at the remote station, possible reasons: □ station is turned off; □ firewall blocks specified port; □ the OS at a remote station is not Windows OS. • sharing and security model for local accounts is not configured; • authorization server (domain controller) is not available; • unknown user name or bad password; • the SMBv1 protocol is disabled.
	ⓘ The remote Agent installation requires the SMBv1 protocol that is disabled by default for some versions of Windows OS. Information on how to detect, enable and disable SMBv1, SMBv2, and SMBv3 in Windows and Windows Server is given at [Microsoft company web site]().	
	Insufficient privileges to open the *<share>* shared resource at the *<host>* station	The `ADMIN$` resource does not exist on a remote station, or not enough privileges to open it.
Sending files to the *<host>* station	The *<path>* path in the *<share>* shared resource is not found on the *<host>* station	The `ADMIN$/TEMP` directory does not exist.
	Unable to create the *<path>* temporary folder in the *<share>* shared resource on the *<host>* station	Unable to create the temporary directory in `ADMIN$/TEMP`, e.g., not enough privileges to write.
	Unable to delete the *<path>* temporary folder in the *<share>* shared resource on the *<host>* station	Unable to delete the temporary directory in `ADMIN$/TEMP` after the procedure is complete. E.g., if the service was not completed, or someone opened a file in this directory.

Step	Error	Reason
	Unable to open the *<path>* file for reading on the Server Unable to read the *<path>* file on the Server	The installer file was not found on the Server, or insufficient privileges are set on the installer file.
	Unable to open the *<path>* file for writing in the *<share>* shared folder on the *<host>* station Unable to write the *<path>* file in the *<share>* shared folder on the *<host>* station	Not enough privileges to read/write corresponding files or in the corresponding directories.
Creating service on the *<host>* station	Error connecting to the server service (srvsvc RPC) on the *<host>* station	Remote management of services is not available.
	Error connecting to SCM on the *<host>* station Unable to create the service on the *<host>* station Unable to start the service on the *<host>* station Unable to stop the service on the *<host>* station Unable to delete the service on the *<host>* station	Not enough privileges to control services.
Running service on the *<host>* station	Unable to get the service state on the *<host>* station	Possible SCM error.
	Installation timed out on the *<host>* station	The installer did not have time to install the Agent for the specified period. Possible reasons: a slow channel between the station and the Server, not enough time to download necessary data.
	Unable to get the local path to the *<share>* shared resource on the *<host>* station	Unable to locate the path to the `ADMIN$` resource on the station.
	The service has faulted with an error on the *<host>* station. Completion state: *<share>*. Error code: *<rc>*.	The Agent installer errors.

Resolving an Error of BFE during Dr.Web Agent for Windows Installation

For operation of some components of Dr.Web Anti-virus for Windows, Base Filtering Engine (BFE) service must be running. If this service is missing or damaged, Dr.Web Agent for Windows cannot be installed.

If Dr.Web Agent for Windows installation attempt is failed with BFE error, you must perform the following actions:

1. Corruption or absence of BFE service can indicate security threats on the station. Scan the station system using the CureNet! utility provided by Doctor Web company.

   You can request the demo version (diagnostics but not curing) of the utility here: https://download.drweb.com/curenet/.

   You can read the terms of use and the cost of the utility full version here: https://estore.drweb.com/utilities/.

2. Restore the BFE service on the station. To do this, you can use the utility for troubleshooting the firewall from Microsoft (for Windows 7 and later operating systems).

   You can download the utility here: https://support.microsoft.com/en-us/help/17613/automatically-diagnose-and-fix-problems-with-windows-firewall.

3. Run Dr.Web Agent for Windows installer and perform the installation according to the general procedure given in the **Installation Manual**.

   If the problem still remains, please contact the Doctor Web technical support service.

Technical Support

If you encounter any issues installing or using company products, before requesting for the assistance of the technical support, take advantage of the following options:

- Download and review the latest manuals and guides at https://download.drweb.com/doc/.
- Read the frequently asked questions at https://support.drweb.com/show_faq/.
- Browse the Dr.Web official forum at https://forum.drweb.com/.

If you have not found solution for the problem, you can request direct assistance from Doctor Web company technical support by one of the following ways:

- Fill in the web form in the corresponding section at https://support.drweb.com/.
- Call by phone in Moscow: +7 (495) 789-45-86.

Refer to the official website at https://company.drweb.com/contacts/offices/ for regional and international office information of Doctor Web company.

Keyword Index